DOCUMENT RESUME

ED 168 240 EC 113 812

TITLE	State of the Art Literature Review on the Mainstreaming of Handicapped Children and Youth.
INSTITUTION	Applied Management Sciences, Inc., Silver Spring, Md.
SPONS AGENCY	Administration for Children, Youth, and Families (DHEW), Washington, D.C.
PUB DATE	1 Sep 76
CONTRACT	105-76-1113
NOTE	76p.; Parts are marginally legible due to print quality
EDRS PRICE	MF01/PC04 Plus Postage.
DESCRIPTORS	Administration; *Handicapped Children; Identification; Incidence; Labeling (of Persons); *Mainstreaming; Methods; Preschool Programs; Teaching Methods

ABSTRACT

The report presents a state-of-the-art literature review on the mainstreaming of handicapped children and youth. An overview of mainstreaming is presented, along with an historical perspective that includes discussions of such aspects as legal impetus and reaction to labeling. Methodological issues considered include the presence of intervening variables, the over-generalization of findings, and the presence of undefined and vague variables. Among the useful findings on mainstreaming reviewed are successful assessment methodology, optimal administrative procedures, and optimal teaching procedures. Some implications of the research reviewed are covered, including such issues as who benefits from mainstreaming and what its costs are. Non-mainstreamed programs designed for handicapped preschoolers are also considered, including state legislated and grassroots programs. Surveys of the incidence of handicapped children aged 0-5 are also covered. A bibliography is included. (DLS)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED168240

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

G-93

STATE OF THE ART LITERATURE REVIEW ON THE MAINSTREAMING OF HANDICAPPED CHILDREN AND YOUTH

BEST COPY AVAILABLE

September 1, 1976

Prepared by:

APPLIED MANAGEMENT SCIENCES, INC.

Contract No. HEW 105-76-1113

EC 113812

962 Wayne Avenue • Suite 701 • Silver Spring, Maryland 20910
Telephone 301 585-8181

TABLE OF CONTENTS

Section	Title	Page
I.	PROCEDURES.	1
II.	OVERVIEW OF MAINSTREAMING	2
III.	HISTORICAL PERSPECTIVE -- THE EMERGENCE OF MAINSTREAMING	3
IV.	METHODOLOGICAL ISSUES IN THE RESEARCH	13
V.	UTILITY OF FINDINGS ON MAINSTREAMING	21
VI.	IMPLICATIONS OF THE RESEARCH TO THE PROPOSED STUDY	36
VII.	NON-MAINSTREAMED PROGRAMS DESIGNED FOR HANDICAPPED PRESCHOOLERS.	39
VIII.	SURVEYS OF THE INCIDENCE OF HANDICAPPED CHILDREN AGED 0-5 IN THE UNITED STATES	55
IX.	CONCLUSIONS	60
BIBLIOGRAPHY		

I. PROCEDURES

In the conduct of this report, Applied Management Sciences reviewed over one hundred articles, books, conference reports, and dissertations. This number represents but a partial subset of the several hundred related articles which have been written on the subject of mainstreaming. Unfortunately, the vast majority of written material provides disappointingly little insight on mainstreaming from either a research or evaluative point of view. Therefore, in writing this report we have chosen to cite only those studies which contribute substantial knowledge to the subject matter. The obvious exception to this rule is the Chapter on Methodological Issues. Here, with an abundance of articles to choose from, we have singled out several of the articles which illustrate the weaknesses inherent in so much of the written literature.

In compiling this search, the obvious hindrance to our effort was that of time. Still, we believe that although we were unable to review all available literature, we have reviewed a representative sampling, as well as all of the key pieces cited by the experts. In addition, because of the dearth of usable materials on mainstreaming, we have at the suggestion of OCD, included two other sections which will provide us with applicable materials for the project at hand. These chapters, Non-Mainstreamed Programs Designed for Handicapped Preschoolers and Surveys of the Incidence of Handicapped Children aged 0-5 in the United States, follow the discussion of mainstreaming, which forms the bulk of this volume.

To perform this effort, the following resources were consulted:

- The Library of Congress
- Council for Exceptional Children
- The Association for Childhood Education International
- The George Washington University Library
- National Institute of Education Library
- Office of Education Library
- Bureau of Education for the Handicapped
- Office of Child Development

An analysis of the materials reviewed and critically examined appears in the report which follows.

II. OVERVIEW OF MAINSTREAMING

> Clearly, special education for handicapped children is in the throes of transition. Any pronouncement on mainstreaming at this point is likely to be viewed in retrospect as less than completely accurate -
>
> Lloyd Dunn, The Normalization of Special Education, Inaugural Lecture, University of Saskatchewan, November 1973

Mainstreaming is a topic which has permeated much of the recent literature in special education. The trend toward the integration of handicapped children and youth into regular school programs has greatly accelerated as educators have strived to raise the equality as well as the quality of education. As noted in the quotation cited above, however, the problem has arisen that as educators have rushed to embrace the concept of mainstreaming, they have in their haste not stopped to take a critical look at the efficacy of this practice. That mainstreaming is a popular and seemingly sound approach to education is abundantly clear. What is not clear, though, is just how educationally effective a practice mainstreaming is. The literature, while resplendent with descriptive details of the process, presents, as a whole, a rather confused statement on the subject. The hard data which would allow one to make definitive judgments on mainstreaming is conspicuously lacking. This complaint has been echoed by virtually all critical reviews of

the literature made thus far. To illustrate, a study completed by Wynne Associates in January of 1975 for the Bureau of Education of the Handicapped concluded that:

> The findings of existing research tend to be narrow; few generalizations can be made. The literature provides no clear understanding of the dimensions, variables and attributes of preschool mainstreaming, as practiced. Much of the research is poorly done. Very little of it relates directly to the concerns of administrators and practicioners. The comparative studies thus far have been both inadequate and inconclusive, and there is little indication that ongoing research represents a substantial improvement over that already published.[1]

The events which have led to this lack of conclusive data will be explained below. The bulk of the report will then concentrate on those findings which we are nonetheless able to glean from an indepth examination of the literature. The final section of this report will relate the implications of the literature review to the study at hand.

III. HISTORICAL PERSPECTIVE -- THE EMERGENCE OF MAINSTREAMING

Perhaps the chief reason for the poor descriptive data which characterizes mainstreaming literature is that mainstreaming, unlike most educational innovations, has emerged as a social trend rather than as a result of researched findings. As Meyen, et. al. describe it, "...It is clearly evident that the current mainstreaming movement is not based on systematic research design, curriculum improvements, or instructional strategies which assure resolvement of the pedalogical problems facing the education of exceptional children."[2] Rather, mainstreaming is the outgrowth of a philosophical

---

1/ Susan Wynne, Mainstreaming and Early Childhood Education for Handicapped Children: Review and Implications of Research, Final Report, p.8.

2/ Edward L. Meyen, Glan A. Vergason, and Richard J. Whelan, Alternatives for Teaching Exceptional Children (Denver: Love Publishing Co., 1975), p. 10.

and social position which is directed at enhancing the coping ability of the individual and in augmenting the tolerance and understanding of society as it is reflected in general education. Mainstreaming has been generated by societal reaction, not applied research theories. Therefore, mainstreaming as a concept has developed as a relatively untested innovation which only now is being confronted with the scrutiny of researched evaluation. The impetus which gave birth to this phenomenon will be described below.

According to James Coleman, the entire special education movement is only three quarters of a century old. At the turn of the century, as families lost their economic independence, they also began to lose their welfare functions. The poor, the ill, and the incapacitated thus became the responsibility of the entire community. "The training which a child received came to be of interest to all in the community, either as his potential employers or his potential economic supports if he became dependent."[1/]

The major stimulus to the growth of this movement was not so much a philosophical concern but a financial impetus. States began to pass laws which provided the financial incentive for the development of programs which catered to the needs of the handicapped. In 1911, New Jersey passed a law which made it mandatory for local boards of education to determine the number of handicapped children residing within their district and, in the case of mental retardation, to provide special classes wherever ten or more children could be found. New York followed suit in 1917 and Massachusetts by 1920. By 1948, 1500 school systems reported the use of special education classes for children with various types of handicaps. In 1958, 3600 systems were practicing this system of special education. Over 8000 school districts participated in this practice by 1965. Today it is estimated that 40% of the approximately 6 million school aged handicapped youngsters in the country are attending special education classes.[2/]

1/ James Coleman, "The Concept of Equality of Educational Opportunity," Harvard Educational Review (Winter 1968), p. 8.

2/ Romaine Machie, "Spotlighting Advances in Special Education," Exceptional Children, p. 38.

Thus for over fifty years, the idea of special, self-contained classrooms for the education of the handicapped was the accepted pattern. Its existence was the norm. Educational segregation of the handicapped went unchallenged.

The concept of mainstreaming obviously directly challenges the foundations on which our traditional system of education is predicated. Mainstreaming, as a concept, contends that the needs of the entire child -- social and emotional, as well as academic -- can best be served when he/she is integrated into the "mainstream" of general education. This thought is not a new one;[1/] it is only the momentum of the movement over the past eight years which can be regarded as revolutionary.

The impetus for mainstreaming can be traced back through the literature to the early 1930's. In 1932, Bennett conducted the precursor of the efficacy studies on special education.[2/] In this work, Bennett expressed his concern over the placement of mentally retarded children in special, self-contained classrooms. He concluded that retarded children in regular classes with little or even no help were able to out-perform their counterparts in special education classes. Bennett's concern was reiterated by Pertsch who came to similar conclusions in 1936.[3/] These concerns over segregation of handicapped children went largely unnoticed for almost a decade. Then, in 1944, the Twenty Second Annual Meeting of the International Council for Exceptional Children adopted as its agenda, the "Segregation versus Non-Segregation of Exceptional Children."[4/] The views

---

1/ Jenny W. Klein, "Mainstreaming the Preschooler," Young Children (July 1975), p.5.

2/ A. Bennett, A Comparative Study of Subnormal Children in the Elementary Grades (New York Teachers College, Columbia University, 1932).

3/ C. F. Pertsch, A Comparative Study of Subnormal Pupils in the Grades and in Special Classes (New York: Teachers College, Columbia University, 1936).

4/ Marquis Shattuck, "Segregation versus Non-Segregation of Exceptional Children," Journal of Exceptional Children (12, 1946), pp. 235-240.

expressed by this panel confirmed the need to integrate handicapped children into regular classes wherever possible.

The opinion of the delegates to that 1944 meeting was, by all accounts, a minority one. Separate special education classes for the handicapped were the accepted practice. Those educators who even considered the idea of mainstreaming could find little statistical support for their position. The earlier studies were wrought with weaknesses in design and upon reconsideration lost favor in the educational community. Reexamining this issue in 1962, Johnson, however, concluded that of fourteen studies previously conducted on the efficacy question, while there was no support of integrated classes, neither was there any support in favor of placement in special classes. He wrote:

> It is indeed paradoxical that mentally handicapped children having teachers especially trained, having more money (per capita) spent on their education, and being enrolled in classes with fewer children and a program designed to provide for their unique needs should be accomplishing the objectives of their education at the same or at a lower level than similar mentally handicapped children who have not had these advantages and have been forced to remain in the regular grades.[1/]

A great deal of discussion followed the Johnson article. Heated debates raged as a result of his challenge of the traditional system, but, in practice, very few actual changes in the system ensued. It was not until 1968, that the educational audience listened to what had been said earlier about the benefits of mainstreaming and began to embrace the idea. The instigation for this seemingly sudden conversion came from Lloyd Dunn's now landmark essay, "Special Education for the Mildly Retarded - Is Much of It Justified?" In this article, Dunn boldly questioned the integrity of special classes as the model for serving mentally retarded children. Dunn exhorted educators to "...stop being pressured into a continuing and expanding special education program that we know now to be undesirable for many of the children we are dedicated to serve."[2/]

[1/] G. Orville Johnson, "Special Education for the Mentally Handicapped," Exceptional Children, (29,1962), p. 66.

[2/] Lloyd M. Dunn, "Special Education for the Mildly Retarded - Is Much of It Justified?" Exceptional Children (35,1968), p. 5.

The respect which Dunn carried in the educational community coupled with the social climate of the day made educators receptive to the mainstreaming thesis for the first time in nearly forty years. The impact which Dunn was to have on special education was monumental and swift. Just three years later, MacMillan acknowledged Dunn's influence: "Clearly, Dunn has been the important influence in reversing a trend toward the proliferation of self-contained special classes." [1/]

In addition to this concern held by educators for the most appropriate class placement for handicapped children, several other major influences led to the creation of a climate which was receptive to the adoption of the mainstreaming thesis. Each of these will be described below.

Legal Impetus

Perhaps the chief social influence leading to the adoption of mainstreaming has come directly through legislation and the court system. It has been said that mainstreaming is merely a direct outgrowth of the civil rights movement.[2/] By 1974, over 36 cases had already appeared before the State and Federal courts which were decided in favor of guaranteeing a handicapped child the full right to education, by applying the doctrine of least restrictive alternatives. Basically, what this doctrine dictates is that when the government pursues a legitimate goal which may at the same time restrict an individual's liberty, it must do so using the "least restrictive alternative" available. When applied to education, the courts have interpreted that special education, systems and/or practices are inappropriate if they remove children from their expanded peer group without benefit of constitutional safeguards. "Placement in special environments for educational purposes can, without appropriate

---

[1/] Donald L. MacMillan, "Special Education for the Mentally Retarded: Servant or Savant," Focus on Exceptional Children (2, 1971), p.1.

[2/] Martin J. Kaufman, Jay Gottlieb, Judith A. Agard, and Maurine B. Kukie, Mainstreaming: Toward an Explanation of the Construct, Intramural Research Program, Bureau of Education for the Handicapped.

safeguards, become a restriction of fundamental liberties."[1/] If special classes for the handicapped are to be used, the State must bear the burden of proof that such action is necessary. Mitigating factors particular to a school district such as jurisdictional practices or lack of financial support cannot take precedence over the rights of the individual.

The following cases are illustrative of court decisions which have guaranteed the handicapped child the right to a mainstream education:[2/]

- Fred G. Wolf, et.al. vs. the Legislature of the State of Utah

  In 1969, Judge Wilkens required that two mentally retarded children who had been excluded from a general education and were placed under the auspices of the Department of Welfare, be provided educational opportunities within the public education system.

- Pennsylvania Association for Retarded Children,et. al vs. the Commonwealth of Pennsylvania

  In October 1971, the court ordered the State to provide education to all mentally retarded children, including those living within State institutions. The principle handed down was that if education is provided by the government to some, it must be made available to all.

- Ricky Watt vs. Stonewall Stickney

  In 1971, the federal court in Alabama held that the primary function of special education was integration into the community as a whole. Schools were to implement the principle of normalization.

1/ Richard A. Johnson, Models for Alternative Programming: A Perspective," (1974) p. 157.

2/ Compiled from Frederick J. Weintraub "Recent Influences of Law Regarding the Identification and Educational Placement of Children"; Richard A. Johnson, Models for Alternate Programming: A Perspective; and Gary W. Nix, Mainstream Education for Hearing Impaired Children and Youth.

- Mills vs. Board of Education of the District of Columbia

  In 1973, the Court held that each member of the plaintiff class was to be provided with a publicly supported educational program that was suited to his/her needs, regardless of his/her mental, physical, or emotional disability and regardless of the costs to the State. The judge decreed that "Among the alternative programs of education, placement in a regular school class with appropriate ancillary services is preferable to placement in a special school class."

In summation, the courts have firmly established a legal precedent for mainstream education. In a 1974 paper, Attorney Herbert P. Feibelman concluded that "The principle has been clearly established that public education must be provided in the least restrictive environment, designed to maximize the abilities of the child, and with a view toward normalization."[1/] State legislation on the education of the handicapped has, as a consequence of these decisions, begun to incorporate legal safeguards into the law. In 1971, two model State laws were drafted by the Council for Exception Children to emphasize this thrust.[2/] These models have provided the framework for the enactment of legislation affecting all exceptional children at the State level. Typical of such laws is this one passed by the Iowa State legislature on May 28, 1974:

> To the maximum extent possible, children requiring special education shall attend regular classes and shall be educated with children who do not require special education. Whenever possible, hindrances to learning and to the normal functioning of children requiring special education within the regular school environment shall be overcome by the provision of special aids and services rather than by separate programs for those in need of special education. Special classes, separate schooling or other removal of children requiring special education from the regular education environment shall occur only when and to the extent that the nature of severtiy of the educational handicap is such that education in regular classes, even with the use of supplementary aids and services, cannot be accomplished satisfactorily.

1/ H. P. Feibelman, "You, The Law, and Your Child" Paper presented at the Alexander Graham Bell National Convention, Atlanta, Georgia June 21, 1974.

2/ Council for Exceptional Children, State Law and Education of Handicapped Children: Issues and Answers, 1971.

In all, over half of the States have enacted legislation aimed at educating exceptional children "as a part of rather than apart from" their nondisabled peers.[1/]

State Fiscal Policies

In addition to the legal boost given to the mainstreaming movement, the trend has also been influenced by the financial policies prevalent in a great many of the States. Depending on the particular policy of a State, the fiscal resources used to reimburse school systems for educational services provided have served to either reinforce or discourage the implementation of a mainstreaming policy. For example, States such as Georgia and Texas are actually encouraged to adopt a mainstreaming policy since State law permits the inclusion of handicapped children in the funding formula for general education, but not for segregated classes. Differential pupil accounting procedures therefore provide funding for the mainstreamed child not only in terms of special education costs but also in terms of allowing the handicapped child to be included as a part of the formula for funding. Consequently, mainstreaming is encouraged through an incentive system which provides resources to regular education which would not otherwise be available.[2/] Florida likewise uses a weighted equivalency formula which favors the process of mainstreaming. In New Mexico, handicapped children can be reimbursed either as a part of regular or special education.

A further dollar incentive to mainstream is provided by the laws of many States which require districts who are not able to provide special services for the handicapped to buy such services from appropriate agencies. The ever rising costs of buying such services (including transportation) has caused some districts to rethink their stand on special education. Mainstream programs are able to eliminate

---

1/ Gary W. Nix, Mainstreaming for Hearing Impaired Children and Youth (New York: Grune and Stratton, 1976), p.1.

2/ Georgia Board of Education and State Superintendent of Schools, Policies and Executive Procedure, Atlanta, Georgia.

the need for providing these extensive services. To illustrate, a study of the Lexington School for the Deaf has estimated that by mainstreaming students, taxpayers are able to save on the average 28,000 per child.[1/]

The enactment of governmental policies such as those cited above has served as an inducement -- albeit not a very altruistic one -- to the adoption of mainstream education for the handicapped.

Reaction to Labeling

In conjunction with the legal pressures to mainstream, society has, in general, experienced a social thrust in this direction. The debilitating effects of negative labels on the expectations and behavior of children and teachers has been well documented in the literature. In their now classic study, Rosenthal and Jacobson, ably demonstrated that a teacher's perceptions of a child's abilities were able to affect actual changes in that child's behavior. When the teacher believed a child to be gifted --whether or not that child was in fact so -- the child showed rapid academic gains. The encouragement and belief of the teacher were in themselves responsible for the child's intellectual growth.[2/]

Conversely, the effect of negative labels on a child can be a devastating, self-fulfilling prophecy. Problems which have been attributed to this practice include the following:[3/]

- There is a stigma associated with the label
- The label may adversely influence the behavior and expectations of what phenomenologists refer to as significant others
- There are no constitutional safeguards which apply to labeling
- Labeling has only questionable relevance to the actual teaching/learning process

---

1/ L. Connor, "That the Deaf May Speak," Paper presented at Madison Association for the Deaf, Madison, Wisconsin, Spring 1972

2/ Robert Rosenthal and Lenore Jacobson, Pygmalion in the Classroom (New York: Holt, Rinehard & Winston, 1968)

3/ Compiled from W.V. Beez, Influence of Biased Psychological Reports on Teacher Behavior (Indiana University, 1968); H.S. Becker, Outsiders Studies in the Sociology of Deviance (New York: Free Press of Glencoe); J.J. Gallagher, "The Special education Contract for Mildly Handicapped Children, "Exceptional Children" 138, 1972) pp. 525-536; and Meyen, et al. Alternatives for Teaching Exceptional Children (Denver: Love Publishing Co., 1975).

The repercussions of this practice have led a great many educators and lay persons to actively seek the abandonment of labels in favor of descriptions of children in terms of observable, performance related behaviors (e.g. language performance, psycho-social performance, motor performance). The support of this practice has encouraged the spread of mainstreaming as an integral part of this campaign.

Societal Variables

All of the pressures outlined above have combined to form a social environment which is receptive to the underlying rationale for mainstreaming. The traditional mode of special education with its segregated classes has encouraged what one observer has called a "surplus population" of unassimilables. [1/] Technological advances, economic uncertainties, and philosophic reconsiderations have challenged us to rethink our policy of special education. Mainstreaming, with its emphasis on both individuality and normalization, is strongly appealing to the current tenor of society.

"Bandwagon" Support

The overall impact of the acceptance of mainstreaming by society at large has led to what Leslie refers to as "bandwagon" support of the concept.[2/] As public opinion has embraced the practice, enthusiasm and backing have mushroomed. While such support is obviously needed for any movement to be effective, support is by no means justification enough for adoption of a practice. As Leslie describes the situation, the practice of mainstreaming has been given attention and recognition through the media and professional meetings. As interested professionals hear of the practice, they too attempt to replicate the practice within their own programs. Leslie writes: "Those 'professionals' duplicating the program in name only appear to change

---

1/ Edward L. Meyen, "Rationale for Alternative Programming," p. 28.

2/ Perry T. Leslie, "A Rationale for a Mainstream Education," p.24.

little or nothing in their existing programs - with the exception of the addition of the label 'mainstream.'"[1/]

The result of the practices outlined above is confusion over exactly what constitutes mainstream education. More importantly to the study at hand, there is a dearth of programs and research which allows one to make definitive statements on the subject of mainstreaming. As Nix sums it, "The educational practice of mainstreaming has out-paced the diagnostic and educational technology of mainstreaming. A rapidly developing body of case law, new educational legislation, and an increasing trend toward administrative legal accountability have placed many professionals in a very difficult position."[2/]

The historical rationale for the current crisis in which mainstreaming evaluation finds itself has been expanded upon at length to place the situation in context. Mainstreaming, as a practice, is a popular, legally mandated approach to special education. However, by having been borne in the courts and in society's conscience, mainstreaming has avoided the scrutiny of the researcher and the theoretician. This situation is in direct contrast to most education practices which arise as a result of educational planning, research, and testing. The challenge which now awaits educators is to assess just how viable and effective the already accepted practice of mainstreaming is. In the following sections we will discern what usable findings can be derived from the literature to aid us in this quest.

IV. METHODOLOGICAL ISSUES IN THE RESEARCH

As outlined above, the issue of mainstreaming education is in flux. Comparatively little research has been performed in the

---

[1/] Perry T. Leslie, "A Rationale for a Mainstream Education," p. 25.

[2/] Gary W. Nix, Mainstream Education for hearing Impaired Children and Youth (New York: Grune and Stratton, 1976), p.1.

field. Chaffin writes, "It is...evident that the most notable omission of the various components of the programs reviewed is evaluation."[1] Similarly, that research which has been done, has all too often been beset by methodological problems. To quote from the Wynne Associates assessment:[2]

> With few exceptions, the research in this area suffers from methodological problems that render much of it virtually useless.
>
> Most of the views about mainstreaming held by its proponents are based on philosophical and political considerations rather than on hard data. Indeed, it is often difficult to read what little research has been done without tripping over the biases of the researcher.

Among the faults which are inherent in many of the reviewed studies are the following:

- Sampling inconsistencies and sizes. Faulty sampling designs appear to be one of the key weaknesses in the reviewed literature. In his survey of the literature, MacMillan found that "with few exceptions, these studies could be described as poorly designed, replete with sampling biases which render the results uninterpretable."[3] To illustrate, in both the studies done by Cassidy and Stanton[4] and Thurstone[5] it was con-

---

[1] Jerry D. Chaffin, "Will the Real 'Mainstreaming' Please Stand Up! (or...Should Dunn have Done It?), Focus on Exceptional Children (6, October 1974), p. 201.

[2] Susan Wynne, Mainstreaming and Early Education for Handicapped Children: Review and Implications of Research, Final Report, pp. 51-52.

[3] Donald L. MacMillan, "Special Education for the Mentally Retarded: Servant or Savant," Focus on Exceptional Children (2, 1971), p. 9.

[4] V. Cassidy and J. Stanton, "An Investigation of Factors in the Educational Placement of Mentally Retarded Children: A Study Between Children in Special and Regular Classes in Ohio," USOE Cooperative Research Programs, Project No. 043,1959.

[5] T. G. Thurstone, "An Evaluation of Educating Mentally Handicapped Children in Special Classes and in Regular Grades," USOE Cooperative Education Programs, Project No. OE-SAE-6452, Chapel Hill, North Carolina, 1960.

cluded that the mentally retarded children enrolled in the regular grades exceeded in academic achievement those who were enrolled in the special classes. However, like in the vast majority of reported studies, the researchers did not randomly assign the handicapped children to the two class situations. This is an especially acute problem when dealing with mainstreaming, since it is usually the case that it is those children who are most likely to succed who are placed in the regular classes.[1] As the Wynne Associates study notes, "Unfortunately, much of the research literature we reviewed has been done with an eye toward 'proving' that mainstreaming works or does not work (usually the former)."[2]

In addition to the marked sampling biases which plague the literature, there is the equally serious problem of the small sampling sizes which are so often employed in the research designs. Unfortunately, this is a problem which it is almost impossible to correct for since population sizes of integrated handicapped children are usually so small. For example, in an otherwise carefully controlled study, Kennedy and Bruininks were only able to obtain in a sample of 277 children, 15 mainstreamed children to study.[3] Likewise, in another otherwise excellent study, the Pickney Project in Lawrence, Kansas studied only eleven handicapped children in a total school population of 224. Those eleven who were selected were, in addition, biasly picked out of a pool of 34 enrolled handicapped children because it was felt by a committee of special education teachers, the school psychologist, and the principal of the school that these eleven were most likely to achieve success in a mainstreamed environment.[4] When dealing with such small numbers, drawn

---

[1] J. Gottlieb and M. Budoff, "Attitudes Toward School by Segregated and Integrated Retarded Children: A Study and Experimental Validation," Studies in Learning Potential (2, 1972), p. 35.

[2] Susan Wynne, Mainstreaming and Early Childhood Education for Handicapped Children: Review and Implications for Research, p. 52.

[3] P. Kennedy and R. Bruininks, "Social Status of Hearing Impaired Children in the Regular Classrooms," Exceptional Children (40, 1974), pp. 336-35.

[4] Bob Campbell, Fred Geer, and Betty Weithers, "The Pickney Project" Paper Presented at CEC Annual Convention, New York, New York, April 1974.

conclusions must be viewed with a degree of apprehension.

This problem is even more aggravated at the pre-school level where large sample sizes can rarely be drawn. In a 1974 study by Devoney, Guralnick and Rubin, the entire size of the sample of handicapped children studied was limited to seven.[1] Few generalizations can be made from such limited studies.

- Presence of intervening variables. Just as many of the studies are weakened by sampling biases so too are they further weakened by a widespread failure to control for outside variables. Administrative policies, teacher attitudes, parental and family attitudes may all play a role in influencing student achievement. Jordan underscores this problem in a report of recommendations on the subject prepared for the Bureau of Education for the Handicapped.[2] In a sample study conducted by Grosenick, she notes that although the study concluded that positive social and academic effects were evidenced in mainstreamed classrooms, specific, non-controlled for variables were also at work--cooperativeness of the regular classroom teacher, personality of the receiving teacher as compared to the special child and his/her needs, and special academic needs of the child.[3] It is therefore difficult to sort out which effects were due to the teaching model and which were due to extraneous factors.

- Over-generalization of findings. Because of the paucity of research that has been conducted in the arena of mainstreaming, there has been a tendency for researchers to heavily generalize the findings of one study on to their own. The result of this practice has been to further weaken methodological designs. Bereiter underscores the problems involved in generalizing the results of one study to another: "Such studies, even when adequately designed to test treatment effects, allow only the most tenuous comparisons between one program and

---

1/ C. Devoney, M. J. Guralnick, and H. Rubin, "Integrating Handicapped and Non-Handicapped Children: Effects on Social Play," Childhood Education (50, 1974), pp. 360-364.

2/ T. E. Jordan, et. al. Recommendations for Research Concerning the Education of Young Handicapped Children: A Report from the National Program on Early Childhood Education (CEMREL) to the Bureau of Education of the Handicapped, 1971.

3/ Judith Grosenick, "Integration of Exceptional Children into Regular Classes: Research and Procedure," Teaching Exceptional Children (2, 1970), pp. 113-119.

another, because each program is evaluated by a different population, different testers and so on."[1]

The problem becomes further aggravated when one attempts to apply conclusions obtained at one grade level to other levels. The bulk of mainstreaming literature focuses on the elementary-aged child. But the applicability of findings obtained from data on school-age children to programs being initiated at the preschool or high school level is a basically unexplored issue. Swap, in writing of the developmental differences which influence the learning of children, brings to the forefront the problems inherent in applying developmental conclusions about one age group of children to another[2]. Piaget, Havigurst and Erikson have long established that children who are at differing developmental stages will not accrue similar benefits from identical learning environments. Other authors have pointed to the differences in curricular objectives and teacher attitudes as further evidence for non-adoption of conclusions gained with elementary aged students[3]. The Wynne Associates report concludes: "We question the validity of using data from studies at the elementary school level to support hypotheses about preschool children and programs until more research and evaluation has been done on the applicability of elementary school data to preschool children[4].

---

[1] C. Bereiter, "An Academic Preschool for Disadvantaged Children: Conclusions from Evaluation Studies," in J. C. Stanley(ed) Programs for the Disadvantaged (Baltimore: John Hopkins Press, 1972), p. 2.

[2] M. Swap, "Integrating Children with Special Needs Into Regular Preschool Classes: Some Guidelines for Assessment," BAEYC Reports (15, 1974), p. 120.

[3] M. Budoff and J. Gottlieb, "A Comparison of EMR Children in Special Classes with EMR Children Who Have Been Reintegrated into Regular Classes," Studies in Learning Potential (3,1974)

[4] Susan Wynne, Mainstreaming and Early Childhood Education for Handicapped Children: Review and Implications of Research, p. 94.

- Presence of undefined and vague variables. One overall weakness characteristic throughout the literature is the non-specificity of variables employed. Even the term mainstreaming itself, when used in the context of an experimental design, can denote a variety of situations. Kaufman, et. al. note that, "Although the term 'mainstreaming' permeates much of the recent literature in special education, a precise definition of the term has remained elusive ... A concise definition of mainstreaming that incorporates the many complexities inherent in describing the interrelationships between a [handicapped] child's educational needs and the educational experiences offered in the regular classroom is clearly necessary[1]. To illustrate the complexity of the issue, Birch in 1974 incorporated 14 descriptors and a panoply of related nomenclature into his definition[2]. Further, there are various types and degrees of mainstreaming that have been identified in the literature. The writings of Bitter and McGee outline these eight approaches to mainstreaming[3]:

  -- Type I: Complete mainstreaming of the student in his or her neighborhood school without supportive help from a specialist.

  -- Type II: Full mainstreaming of the student in his or her neighborhood school with supportive instruction from a special education teacher or other kind of specialist.

1/ Martin J. Kaufman, Jay Gottlieb, Judith A. Agard, and Maurine B. Kukic, Mainstreaming: Toward An Explanation of the Construct, Intramural Report, Bureau of Education of the Handicapped, pp. 39-40.

2/ J. Birch, Mainstreaming: Educable Mentally Retarded Children in Regular Classes, Leadership Training Institute, University of Minnesota, 1974, p. 15.

3/ Donald J. McGee, "Mainstreaming Problems and Procedures: Ages 6-12," p. 137; and Grant B. Bitter, "Whose Schools: Educational Expediency/Educational Integrity?" p. 12.

-- Type III: Partial mainstreaming of the student who is based in a special resource room and attends some general education classes.

-- Type IV: Team teaching arrangements in which general education teachers and special education teachers cooperatively teach all students in a general education setting.

-- Type V: Reverse mainstreaming in which normal students become part of a special education class. This type is most prevalent at the preschool level.

-- Type VI: Self-contained classes from which students go to general education classes for instruction in one or more academic subjects.

-- Type VII: Self-contained classes from which students go to general education classes to participate in one or more nonacademic activities.

-- Type VIII: Completely self-contained classes in which children have occasional contact with non-handicapped peers.

With such latitude of definition, it is no wonder that there is only minimal uniformity between study approaches. For example, the definition of mainstreaming put forth by the Council for Exceptional Children states that mainstreaming must include the addition of support services for those children who are returned to regular classes[1/]. Yet, while this component is integral to some research studies, it is markedly absent from others[2/]. This nonconsistency of scope makes any generalization of conclusions between studies an impossibility.

1/ As cited in Marilyn Rauth, "Mainstreaming: A River to Nowhere or a Promising Current?" Changing Education (April 1976), p. 1.

2/ A. Abeson "Movement and Momentum: Government and the Education of Handicapped Children-II" Exceptional Children (41, 1974), p. 111.

In addition to the blatant confusion which engulfs the practice of mainstreaming itself, there is the documented failure of researchers to delimit other variables in their studies. These include the curricula being utilized, the qualifications of the teacher, and the length of time that the handicapped child had spent in special classes prior to the mainstream experience[1].

- Questionable validity of instruments. In his review of the literature, MacMillan concluded that measurement instruments employed were often improvised and therefore of questionable validity and reliability[2]. A great many of the tests referenced in the literature were developed specifically for the studies at hand. Therefore, they have, at most, had only minimal pretesting and virtually no replications which would furnish validity and reliability scores. Grosenick concurs with this assessment, writing, "...integrations that have occurred may have been noted anecdotally in global terms, i.e. the child made it or he didn't. Changes in performance between the two environments (special and regular class) often have not been readily identified[3]."

  Even in those instances in which standardized tests with accepted standards of reliability and validity have been used, there is still voiced opposition in the literature to their usage. Among the problems cited are the following[4]:

  .. standardized tests have been found to be culturally biased, favoring a middle-class, non-handicapped population

  .. tests that are administered to very young children are markedly unreliable

  .. the mode of communication entailed in a given test may unfairly work against the handicapped child

---

1/ Donald L. MacMillan, "Special Education for the Mildly Retarded: Servant or Savant," Focus on Exceptional Children (2, 1971), p. 10.

2/ MacMillan, p. 12.

3/ Judith K. Grosenick, "Integration of Exceptional Children into Regular Classes: Research and Procedure," p. 278.

4/ See Helen R. Gold, "What Do You Do If the Mainstreamed Hearing Impaired Child Fails? or Mainstreaming: Sink or Swim," and Richard P. Iano, "Shall We Disband Special Classes?"

The failure of instrumentation to produce acceptable findings is one of the strongest flaws apparent in the reviewed literature. Kirk's review of the overall methodology employed in mainstreaming efficacy studies led to this rather bleak conclusion: "Until we obtain well controlled studies of a longitudinal nature, our opinions about the benefits or detriments of special classes will remain partly in the realm of conjecture[1/].

- Limitation of assessments made. Primarily because evaluations of mainstreaming have occurred at the elementary level, the bulk of evaluation data reviewed concerns only cognitive gains. While intellectual growth is, most assuredly a key goal of all mainstreaming efforts, it is by no means the only one. This is especially true when examining preschool efforts. Walker points out that in evaluating young, handicapped children the socioemotional domain is often the most important.[2/] In addition, there is also the very vital though largely ignored area of health growth. In dealing with children who are multidimensional in their growth and development, it is unrealistic and narrow-sighted to examine only cognitive data as proof of program success. Without inclusion of these other components, it is impossible to determine the effectiveness of any given mainstreaming program.

V. UTILITY OF FINDINGS ON MAINSTREAMING

Up to this point, the focus of this literature review has centered on the failure of evaluation research to reach any substantive conclusions concerning the effectiveness of mainstreaming. The widespread popularity of this practice without any accompanying statistically sound assessments of the process has forced us to be able to conclude only that nothing can be concluded. Effectiveness studies provide support for positions both for and against the process. To illustrate, the Cassidy and Stanton and Thurstone studies which have already been cited, found that EMR children succeeded better in the regular classroom environment.

[1/] S.A. Kirk, "Research in Education," in H.A. Stevens and R. Heber (eds) Mental Retardation: A Review of Research (Chicago: University Press, 1964), p. 59.

[2/] Deborah Klein Walker, Socioemotional Measures for Preschool and Kindergarten Children (San Francisco: Jossey Bass, 1973), p. 7.

Goldstein, et. al, however, found that after four years in this environment the situation reversed itself[1]. The failure of these studies to randomly assign subjects to the two treatment groups, however, makes any conclusions difficult to interpret. Similarly, the methodological weaknesses inherent in almost all of the reviewed studies, reduces the strength of any such arguments.

Yet, while weaknesses in the literature far outweigh the strengths, there are, nonetheless, usable findings which can be drawn. These will be elaborated upon below.

Successful Assessment Methodology

In the process of pointing out the obvious methodological flaws which have plagued the vast majority of research studies, critics have in response been able to develop sound approaches to evaluation. The problems involved in using testing instruments of questionable reliability, validity, and cultural fairness have led to the development of instruments which are based on the direct observation of student behaviors. Grosenick identifies this form of instrumentation as "the one method of assessment that appears to offer a fruitful avenue of approach." She explains, "In such a procedure the child becomes his own control. His performance in the regular class is evaluated in terms of what is educationally and behaviorally acceptable in that specific classroom rather than an ideal standard[2]." Researchers

---

[1] H. Goldstein, J. W. Moss, and L. J. Jordan The Efficacy of Special Class Training on Mentally Retarded Children, USDHEW Cooperative Research Program No. 619 (Urbana: Institute for Research on Exceptional Children, 1965).

[2] J. K. Grosenick, "Assessing the Reintegration of Exceptional Children into Regular Classes," Teaching Exceptional Children (2, 1970), p. 115.

such as Becker et. al.[1], Werry and Quay[2], Hall et. al.[3] and Lovitt[4] have substantiated this technique as a viable tool for measurement. Baldwin and Baldwin likewise concur[5]:

> The most neglected field of study and one of the most promising ones is the actual observation of handicapped children of all kinds in their families, in school and in *other naturalistic situations. While the problems of* doing such research are formidable, they are not insurmountable.

Direct observation is an especially effective tool when studying young children and certain handicapped children who are not adept in the skills necessary for mastering tests.

In the same vein, the Learning Accomplish Profile (LAP) developed by Sanford, et. al. is an attempt to break away from the obvious problems relating to the use of standardized, normative tests[6]. Like direct observation, the LAP is a criterion-referenced test of the child in his/her own environment with the teacher as the evaluator.

1/ W. C. Becker, C. H. Madsen, Carole R. Arnold, and D. R. Thomas, "The Contingent Use of Teacher Attention and Praise in Reducing Classroom Behavior Problems," The Journal of Special Education (1, 1967), pp. 287-307.

2/ J. S. Werry and H. C. Quay, "Observing the Classroom Behavior of Elementary School Children," Exceptional Children (35, 1969), pp. 461-467.

3/ R. V. Hall, Diane Lund, and Deloris Jackson, "Effects of Teacher Attention on Study Behavior," Journal of Applied Behavior Analysis (1, 1968), pp. 1-12.

4/ T. Lovitt, "Behavior Modification: Where Do We Go From Here?" Exceptional Children (37, 1970) pp. 157-167.

5/ C. P. Baldwin and A. L. Baldwin, "Personal and Social Development of Handicapped Children," In C. E. Sherrick, et. al. Psychology and the Handicapped Child (Washington: GPO, 1974), p. 183.

6/ A. Sanford, B. Semran, and D. Wilson, The Chapel Hill Model for Training Head Start Personnel in Mainstreaming Handicapped Children (Washington: BEH, 1974.)

Other examples of criterion-referenced process tests include the Callier Systems Approach to teaching the hearing impaired[1] and the Needs Assessment Kit developed by the Judge Baker Guidance Center in Boston[2]. All of these methods of testing are based on a diagnostic/prescriptive approach which concentrates on processes rather than products. Gallagher cites the benefits of this approach, commenting that "While many of us have been trained to think in terms of the use of standardized tests for measurement, many of the most useful kinds of information for evaluation are simple." Direct observations, while not powerful indices of achievement individually, can combine to create a pattern which "reliably indicates the efficacy of a program on a child's level of performance[3]."

Optimal Administrative Procedures

Examination of the many mainstreaming situations characterized in the literature reveals that certain procedures are more conducive to program success than are others. Administrative practices followed by the school, attitudes of the teachers involved, and classroom facilities all contribute to program success.

In the realm of administration, it has been concluded that those schools which have articulated program guidelines, which support an individualized approach to instruction, and which are geared to improving instruction for all students--not proving the efficacy of mainstreaming--provide an atmosphere which is most likely to lead to a successful experience.

---

[1] R. Burroughs and F. W. Powell, "Can We Systematically Meet the Needs of All Deaf Children?" Peabody Journal of Education (April 1974), pp. 171-173.

[2] M. J. Guralnick, "A Research Service Model for Support of Handicapped Children, "Exceptional Children (January 1973), pp. 39-43.

[3] J. J. Gallagher, "Planning and Evaluation," in J. B. Jordan and R. F. Dailey(eds) Not All Little Wagons Are Red (Reston: CEC, 1973), pp. 104-112.

Connor lists these priorities for administering a successful mainstreaming program[1]:

- organizational patterns should be limited
- experienced and proven teaching and supervisory personnel should be chosen for participation in a new project
- focus must be on educational results, not parental attitudes, State directives, or pressure groups
- programs must be rooted in theoretical models
- sufficient time must be allotted to the program
- supportive services should be made available
- teacher training should be on-going
- individualized instruction must be a key feature of the program

In addition to the administrative features noted above, experts in the field have likewise noted that certain structural features also tend to increase the chances for a program's achievement of success. Specifically, the Wynne Study notes that the physical facilities and materials must be both appropriate and available in accordance with the special needs of all children being served[2]. The organization of the classroom itself can either assist or hinder the success of a mainstreaming program. For example, if blind or physically handicapped children are to be mainstreamed, the physical environment of the class must be suited to their needs. Anderson writes, "Quite simply, many handicapped children cannot participate in programs which do not make proper allowances in architecture and classroom arrangements."[3]

---

[1] Leo E. Connor, "Administrative Concerns for Mainstreaming" in Gary W. Nix, Mainstream Education for Hearing Impaired Children and Youth (New York: Grune and Stratton, 1976).

[2] Susan Wynne, Mainstreaming and Early Childhood Education for Handicapped Children: Review and Implications of Research, p. 104.

[3] E. M. Anderson, The Disabled Schoolchild: A Study of Integration in Primary Schools (London: Methuen & Co., 1975), p. 62.

The overall conclusion which can be drawn from the literature is that a structured environment is the most beneficial environment to the handicapped child. Evans notes that this type of structuring aids both the handicapped child and his/her non-handicapped peers to obtain a sense of stability and order[1].

Beeler offers consideration of these features when planning a mainstreamed environment[2]:

- accessibility of classroom entrance
- accessibility and safety of equipment
- space for quiet, independent work
- provision of and storage space for special equipment
- accessibility and placement of furniture

Further, it has been postulated that low teacher-pupil ratios must be instituted in order to provide the degree of individualization that is needed for successful mainstreaming. Karnes puts the optimal ratio at 1:5[3] while Lewis suggests a 1:8 outside limit. She writes, "With a good teacher-child ratio, not more than eight-to-one, there is always someone free to work with one child if necessary ... Many alternatives enable the staff or school to provide great flexibility[4]."

A milieu in which the benefits of mainstreaming can be maximized is predicated on administrative practices dedicated to creating a fostering environment.

---

[1] J. S. Evans, "Classroom Planning for Young Special Children," Teaching Exceptional Children (4, 1972), p. 57.

[2] A. Beeler, "Integrating Exceptional Children in Preschool Classrooms," BAEYC Reports (2, 1973) pp. 38-39.

[3] M. B. Karnes, "Implications of Research with Disadvantaged Children for Early Intervention with the Handicapped." in J. B. Jordan and R. F. Dailey(eds.) Not All-Little Wagons are Red (Reston: CEC, 1973), p. 60.

[4] E. G. Lewis, "The Case for 'Special' Children," Young Children (28, 1973), p. 372.

Optimal Teaching Practices

Perhaps the most important variable in predicting the success of a mainstreaming experience stems from the teacher him/herself. This finding is in line with the rest of educational research which has long established that it is the teacher who is the most important factor in any learning situation. Just as the Harvard Reading Studies concluded that, rather than any method of instruction, it is the classroom teacher who most brings about success in reading, so too have the experts in the field related the teacher to the success of mainstreaming programs. For this reason, it is of critical importance that the attitudes of participating teachers be favorably disposed toward the mainstream situation. If the teacher is uncomfortable or negative in his/her approach this attitude will affect not only the teaching role, but the attitudes of the other children in the class.

As with most educational practices, for whatever the reasons, not all teachers favor mainstreaming. In fact, Barngrover found that whereas nonteaching educators favored the practice of mainstreaming, classroom teachers significantly favored segregation[1/]. Jordan and Proctor feel that attitude is related to age[2/]. They conclude that the younger, less experienced teacher is more favorable in attitude than is the older, more experienced teacher. Panda and Bartel have likewise found that the teacher's attitude will vary according to the type of handicapping condition present in his/her classroom[3/]. Physical disabilities appear to arouse

---

1/ E. Barngrover, "A Study of Educators' Preferences in Special Education Programs" Exceptional Children (37, 1971) p. 755.

2/ J. E. Jordan and D. I. Proctor, "Relationships Between Knowledge of Exceptional Children, Kind and Amount of Experience with Them, and Teacher Attitudes Toward Their Classroom Integration," The Journal of Special Education (3, 1969), p. 434.

3/ R. C. Panda and N. R. Bartel, "Teacher Perception of Exceptional Children," Journal of Special Education (6, 1972), p. 265.

the least negative feelings, emotional disabilities the greatest. Gorelick also found that teachers knowledgeable about one disability were afraid to transfer their knowledge to a child with another handicapping condition[1/]

In order to maximize teacher acceptance of mainstreaming, several authors have put forth the need for systematic teacher training. Jacobs[2/], Lovitt[3/], and Yates[4/], have all documented increased acceptance of handicapped children subsequent to teacher training programs. In addition, teachers' attitudes appear to improve when resource and supportive personnel are made available for consultation[5/].

The importance of obtaining as full a degree of teacher acceptance as possible is underscored in this quote by Valletutti[6/]:

> Segregation or integration is not the critical issue. The values and attitudes of teachers and their effects on the pupil's self-perception and performance are the key questions. The acceptance/rejection order of students by teachers is specific to a particular class and will change when class composition is altered. Ideally, before placing a special child into any class, the attitudes and values of the teacher should be carefully and precisely delineated.

1/ Molly Gorelick, Careers in Integrated Early Childhood Programs (California State University, August 1975), p. 127.

2/ J. Jacobs, The Search for Help: A Study of the Retarded Child in the Community (New York: Brunner-Mazel, 1969).

3/ E. T. Lovitt, Teacher Acceptance of Classroom Integration of Children with Learning Disabilities (Arizona State University, 1974).

4/ J. R. Yates, "Model for Preparing Regular Classroom Teachers for 'Mainstreaming'" Exceptional Child (39, 1973), pp. 471-472.

5/ J. R. Shotel, R. P. Iano, and J. F. McGettigan, "Teacher Attitudes Associated with the Integration of Handicapped Children, Exceptional Children, (9, 1972), p. 680.

6/ P. Vallettuti, "Integration vs. Segregation," The Journal of Special Education (3, 1969), p. 405.

Optimal Parent Participation

Throughout the literature it is apparent that support of the program by the child's family greatly contributes to the overall success of the program. Indeed, much of the literature on mainstreaming is devoted to narrative descriptive praises of this practice by families who have experienced mainstreaming on the individual level[1/]. It is an accepted premise that parental involvement helps to ensure program success.

Parental cooperation and involvement also enable parents to share in the successes which their children are achieving. With this in mind, Head Start programs have long incorporated parental participation as an overall project goal. According to the Third Annual Report of Head Start Services to Handicapped Children, in 1975, "12,457 parents in full year Head Start programs were receiving special services related to their child's handicap[2/].

It has been reported that parental participation further enhances the continuity of the child's learning experiences[3/]. Consistency of attitudes both at home and at school helps to ensure the maximum learning experience for the child. Cansler and Martin sum up the consensus opinion on this subject:

1/ For example, Virginia Stern's "Finger Paint on the Hearing Aid," Volta Review (71, March 1969), pp. 149-154 is one mother's account of her child's experiences as a mainstreamed preschooler.

2/ Head Start Services to Handicapped Children, Third Annual Report, Office of Child Development, June 1975, p. 17.

3/ Early Childhood Programs in the States: Report of a December 1972 Conference (Denver: Education Commission of the States, 1973), p. 45.

"In order to provide the best climate and training for the handicapped child it is imperative that parents' involvement be sought, cultivated and acknowledged as extremely valuable[1]."

Replication Models

The most useful information to be drawn from the literature involves the application of theoretical bases into practice--models for implementation of mainstreaming programs. As with much of the literature on the subject, however, a great many of the so-called models presented in the literature are nothing more than descriptions of programs. There is no theoretical base of design and little thought to educational strategy. Such models will not even be noted here, since in this section we are concerned only with viable findings. Below are presented several models which have been accepted by the educational community for the utility of their constructs.

- Maryland State Department of Education's Continuum of Special Education Services. One of the earliest mainstreaming models to be developed (by Finch, 1969), was that of Maryland's continuum. Developed originally for children with learning disabilities, the model allows the handicapped child to receive specialized services from psychologists, pupil personnel workers, diagnostic - prescriptive teachers, and itinerant and resource room personnel while retaining his/her affiliation as a member of the regular class. In addition to receiving these support services, the child is encouraged to move along a "continuum" -- to the point where he/she is spending less time receiving support services and more time in the regular classroom. Moreover, the flexibility of the program enables the child to experience whatever types of services are most appropriate to his/her needs at a particular stage of development. As Finch describes the program[2]:

---

[1] D. P. Cansler and G. H. Martin (eds.) Working with Families: A Manual for Development Centers (Washington: BEH), p. 19.

[2] Finch, Thomas E., Division of Instruction, Maryland State Department of Education, A Design for a Continuum of Special Education Services, June 1969, p. 5.

With a flexible system of organization, the school can provide adequate services to match the changing needs of exceptional children throughout their school life, beginning in the pre-school years.

- Deno's Cascade of Services. In 1970, Evelyn Deno proposed that special education "conceive of itself primarily as an instrument for social change[1]," arguing that heretofore the prevailing approaches to "personnel training, teacher certification, program funding, and service delivery not only have perpetuated but widened the gap between regular and special education[2]".

  As she perceives it, special education is the research-and-development arm of general education, providing all education with what she terms "developmental capital." According to Deno, both forms of education must be inseparably linked to each other by a cascade of education services. Deno describes this system (Figure 1) as one which "facilitates tailoring of treatment to individual needs rather than a system for sorting out children so they will fit conditions designed according to group standards not necessarily suitable for the particular case[3]." As Leslie describes the system, the child is to be placed only as far into the cascade as is necessary; the child is then to be returned to the upper levels of the cascade as soon as feasible[4]. The cascade system provides the handicapped child with a wide variety of service options, thus emphasizing the individuality of all.

1/ E. N. Deno, "Special Education as Developmental Capital," Exceptional Children (37, 1970), p. 229.

2/ E. N. Deno (Ed.) Instructional Alternatives for Exceptional Children (CEC), p. xiii.

3/ E. N. Deno, "Special Education as Developmental Capital," p. 231.

4/ Perry T. Leslie, "A Rationale for a Mainstream Education for the Hearing Impaired," p. 29.

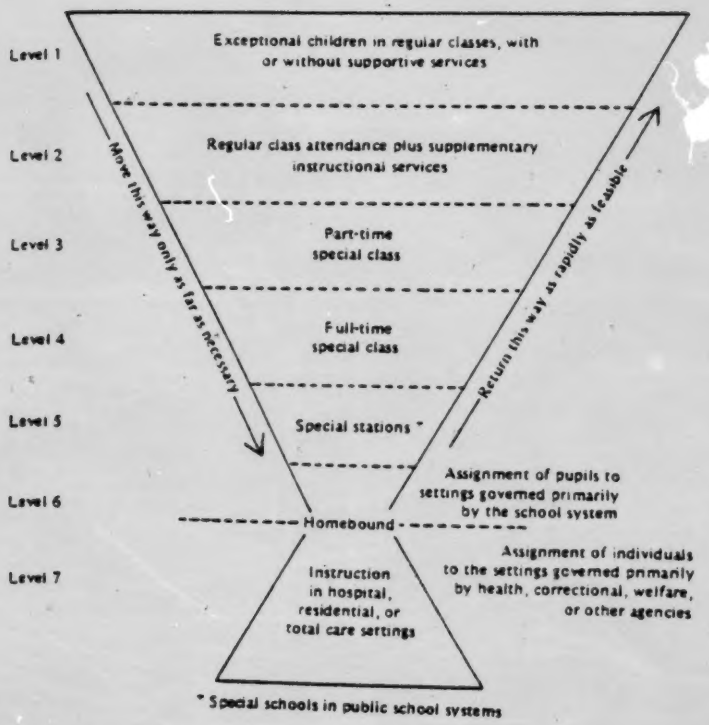
Level 1
Exceptional children in regular classes, with or without supportive services
Level 2
Regular class attendance plus supplementary instructional services
Level 3
Part-time special class
Level 4
Full-time special class
Level 5
Special stations *
Level 6
Assignment of pupils to settings governed primarily by the school system
Homebound
Level 7
Instruction in hospital, residential, or total care settings
Assignment of individuals to the settings governed primarily by health, correctional, welfare, or other agencies
Move this way only as far as necessary
Return this way as rapidly as feasible
* Special schools in public school systems

FIGURE 1: DENO'S CASCADE OF SPECIAL EDUCATION SERVICES

- Lilly's Training Based Model (Zero-Reject System). Stephen Lilly's model for mainstreaming focuses on the school system rather than on the child. Inherent in this model, which was first outlined in 1971, is the policy that "once a child is enrolled in a regular education program within a school, it must be impossible to administratively separate him from that program for any reason[1]." Thus, by adhering to this "zero-reject" policy, the responsibility for failure no longer rests with the child but with the teacher. Educators are thus forced to deal with problems in the classroom rather than to bodily remove them.

  Lilly also places primary responsibility for resolution of the handicapped child's problems on the regular classroom teacher. It is his contention that an active goal of special education must be to train regular teachers to the point where they are self-sufficient enough to not require special education support. In describing the workings of this model, Lilly writes, "At no time during the period of service would the instructional specialist remove a child from the classroom for individual work, whether it be of a diagnostic or tutorial nature, for this practice in no way contributes to preparing the teacher to perform this function in the future[2]." Lilly's model represents a distinct change in our perception of special education. Rather than requiring special education support, it moves towards a replacement of the old system.

- Gallagher's Contract Model. Developed primarily as a prototype model for the mainstreaming of the mildly handicapped, the Special Education Contract involves the signing of a formal contract by parents and school officials prior to the mainstreaming experience. Within this contract both parties would set forth the specific goals that they wish to achieve over the next two years. The contract would be "nonrenewable, or renewable only under a quasi-judicial type of hearing with the parents represented by legal or child advocate council[3]."

1/ M. Stephen Lilly, "A Training Based Model for Special Education," Exceptional Children (37, 1971), p. 745.

2/ M. Stephen Lilly, "A Training Based Model for Special Education," p. 746.

3/ James J. Gallagher, "The Special Education Contract for Mildly Handicapped Children," Exceptional Children (38, 1972), p. 532.

Unlike Lilly's Training Based Model, the Special Education Contract is not intended as a substitute for special education services. As he describes it, the model is a:

> ...suggestion for dealing with two pressing problems facing special education today. The first problem is the difficulty of replacement of mildly handicapped children in regular education once they have been assigned to special education. The second and related problem is the tendency to overassign certain minority group children to special education[1].

Gallagher also proffers the advice that school systems only adopt this model subsequent to indepth discussions at the community level.

- Adamson and Van Etten's Fail-Save Model. This training model was developed in 1972 as a reaction to Lilly's training-based system. Like Lilly, Adamson and Van Etten put the onus of responsibility on the system rather than the child. But unlike Lilly, they propose additional alternatives for handicapped children. As the authors describe it[2]:

  > The "fail" represents the system's failure to meet all children's needs, not the child's. The "save" represents the adaption of the system to the child's individual needs and "save" him.

  The model operates in ten week evaluation and observation cycles. The regular classroom teacher, upon spotting a problem, refers the child to a consulting teacher for testing and recommendations. The child is then returned to his/her class for follow-up treatment. The authors are very adamant upon the point that "At no time does the methods and materials specialist become the tutor or the remedial teacher[3]."

1/ James J. Gallagher, "The Special Education Contract for Mildly Handicapped Children," p. 527.

2/ Gary Adamson and Glen Van Etten, "Zero Reject Model Revisited: A Workable Alternative," Exceptional Children (38, 1972) p. 736.

3/ Gary Adamson and Glen Van Etten, "Zero Reject Model Revisited," p. 737.

> At the conclusion of the ten week cycle, teachers, administrators and parents jointly meet to discuss future actions. The child at this juncture point will either enter another 10 week evaluation and observation cycle or be placed in a resource classroom/regular class for a 90 day period. Following either choice, re-evaluation of the child's progress is again made.
>
> The flexibility of this model enables great individuality of services. The authors are confident of the operational success of this model, noting that it is based on "experience and data gathered from implementing educational diagnosing, itinerant methods and materials, consultant/teachers, resource rooms, materials laboratories, and a teacher-based training model[1/]".

The four models outlined above are presented only as an indication of the types of mainstreaming models which have been developed. They are by no means intended to represent all that is being done in this area. As noted in the literature review, mainstreaming as a construct is not in the peculiar position of having to rationalize its existence. Literally hundreds of educators have rushed to this challenge, offering countless replication models. The selected models have been presented because they are representative of the "better" models which have been developed--they are the ones most often cited in the literature for soundness of theory and excellence of results. These models have themselves generated numerous models which have incorporated key facets of the prototype models. For instance, Chaffin reports that Deno's cascade of services is in some form present in nearly all applied mainstreaming programs, as is Lilly's emphasis on the inservice role of the special educator[2/]. Gallagher's contract

---

1/ Gary Adamson and Glen Van Etten, "Zero Reject Model Revisited," p. 735.

2/ Jerry D. Chaffin, "Will the Real 'Mainstreaming' Program Please Stand Up! (or---Should Dunn Have Done It?)" Focus on Exceptional Children, (6, October 1974), p. 181.

has also been widely adapted, although nowhere is it implemented with the formality described. The Fail-Save Model has been adopted by the State of New Mexico[1/].

VI. IMPLICATIONS OF THE RESEARCH TO THE PROPOSED STUDY

From the preceding review of literature we have seen that much has been written on mainstreaming, but little of substance can be discerned. The literature is characterized by descriptive studies which are, in the main, devoid of statistical input. Those few studies which may be characterized as research oriented are replete with methodological weaknesses and errors. The few substantive conclusions which can be drawn from the literature are, as illuminated in the preceding chapter, that:

- direct observational assessments which are process oriented are preferable to product oriented, normative tests
- administrators can facilitate the success of the mainstreaming opportunity by providing a guideplan for individualizing instruction, reducing class enrollment, and dedicating the school to a program based on servicing the needs of the children
- the physical layout and the facilities in the classroom can enhance the success of the mainstreaming effort
- teachers are the crucial variable in determining the success of the mainstream experience. Attitudes can be improved by the inclusion of regular in-service training and the provision of back-up special education support personnel
- supportive parental attitudes will increase a program's chances for success
- viable models for implementation of mainstreaming programs do exist and can be adapted for use in the schools

---

[1/] E. N. Deno (Ed.) Instructional Alternatives for Exceptional Children, CEC, p. 12.

The implications of these rather limited conclusions to the project at hand is of great magnitude. So little has yet been proven that the challenge which awaits us is large.

In meeting this end, we will need to consider these as yet unresolved issues.

- Who benefits from mainstreaming? Beery rather cheerfully proclaims "Everyone[1]!" Others are more skeptical, but equally evasive. Most like Rauth, prefer to skirt the issue, simply stating "Not all children benefit from a mainstream setting," and fail to identify who this subset is[2]. We would hypothesize that the severely handicapped child, although a prime target of Head Start's outreach, is a less likely candidate for mainstreaming.

- What are the costs of mainstreaming? Although financial incentive has historically been a contributing impetus to the process of mainstreaming, we would take issue with the idea that mainstreaming is a cost-effective alternative to special classes. Where mainstreaming is employed as an alternative to special education without the inclusion of support services, the financial costs of employing special education teachers is indeed reduced. However, the spirit of mainstreaming is lost by such a maneuver. We would agree with McGee's position that "The program costs as much as a traditional program and the factor of cost reduction cannot be used as a selling point...[3]"

- What are the critical variables to successful mainstreaming? From the literature we have already identified administrator, teacher, and parental attitudes as key variables to program success. In the proposed

---

1/ Keith E. Beery, Models for Mainstreaming (San Rafael: Dimensions Publishing, 1972), p. 348.

2/ Marilyn Rauth, "Mainstreaming: A River to Nowhere or a Promising Current?" Changing Education (April 1976), p. 4.

3/ Donald I. McGee, "Mainstreaming Problems and Procedures: Ages 6-12," p. 143.

study we will want to isolate other potentially important factors. One such variable we will want to examine is the attitude of the child's peers. Kennedy and Bruninks found that social status was unrelated to severity of handicapping condition among hearing-impaired elementary aged children[1]. Whether this conclusion is accurate due to the small sample size (15) employed is questionable. Also, the question of student attitudes towards different types of handicapping conditions needs to be considered. We have data on teacher attitudes towards handicaps, but as yet no hard data on student feelings.

Another variable which we will want to consider is the effect of participation in the study on the derived outcomes, i.e., the much noted "Hawthorne Effect." In the literature on mainstreaming this variable seems to have a larger than usual role, partly because motivation appears to be so essential to program success. We must agree with Weikart's findings that"... experimental projects in which researchers have direct control of the curriculum, the operation of the project, and the research design seem to offer potential for immediate positive impact in terms of their stated goals...[2]."

A third variable we will want to explore is that of stage of intervention. In reviewing the literature, one comes to the general understanding that the earlier a child is entered into a mainstreaming situation, the better are his/her chances for success. In working with preschool children, one has the edge of time on the side of success. Yet, we will want to note if this

---

[1] P. Kennedy and R. Bruninks, "Social Status of Hearing Impaired Children in the Regular Classrooms, "Exceptional Children (40, 1974) pp. 336-345.

[2] D. P. Weikart, "Relationship of Curriculum Teaching and Learning in Preschool Education," in J.C. Stanley (ed.) Preschool Programs for the Disadvantaged (Baltimore: Johns Hopkins University Press, 1972), p. 25.

distinction is still visible at the preschool level--do children who are mainstreamed earlier have a better chance for success? Similarly, do children who have more recently been diagnosed as handicapped have a greater chance for success than do children who have been so labelled all their lives?

These and other key variables will have to be highlighted during the course of our study.

- What constitutes successful mainstreaming? As noted in the chapter on methodological problems there is a great deal of ambiguity over what actually constitutes a mainstream experience. Some educators hold that the element of support services must be present for a mainstream situation to exist[1]. Yet, the reality of some Head Start programs is that in some areas support services are simply not available. Does this then mean that children in these programs are not enrolled in mainstreamed classes? Operational criteria which are consistent with the literature will have to be defined before heading out into the field.

  In defining the "success" of a program we will have to delineate a variety of factors--academic achievement, social acceptance, and self-growth among others. Process-oriented instruments for measuring such gains will have to be developed and validated.

VII. NON-MAINSTREAMED PROGRAMS DESIGNED FOR HANDICAPPED PRESCHOOLERS

Since the available materials on mainstreaming and, in particular, preschool mainstreaming are so acutely limited, at the suggestion of the Office of Child Development, we will in this section explore other preschool options which are available to the handicapped child from birth to age five.

As with Project Head Start, the impetus for preschool programs for the handicapped has evolved from a larger concern for early childhood education for all. Preschool programs have come to be viewed as important for all children because "so very much happens in the first few years of life to form the kind of individual who later becomes an adult." In fact, Benjamin Bloom's research indicates that 50% of one's development occurs before the age of four.

---

[1] "Mainstreaming," Exceptional Children (November 1973), p. 2.

Even if one does not accept these figures, it is a generally agreed conclusion that the beginning years of life have a tremendous impact on all future development.[1/]

Using the following set of developmental tasks for the child 0-5, a preschool education attempts to maximize the child's potential in each of these areas:[2/]

- Learning to walk
- Learning to take solid foods
- Learning to talk
- Learning to control elimination
- Learning sex differences
- Achieving physiological stability
- Forming simple concepts of social and physical reality
- Learning to relate one's self emotionally to parents, siblings, and other people
- Learning to distinguish right and wrong

With accomplishment of these tasks, educators feel that the preschool child is encouraged to grow and to learn.

For the preschool child who is also handicapped, early childhood education is deemed to be especially important. Reger writes, "Children with disabilities no less, and probably more, than children without disabilities need specialized assistance from the earliest age."[3/] Theorists such as Piaget, Martin, Weininger, Adkins and Walker, and Kirk are but a few of many educators who have, through the professional literature, warned that for many children, remedial programs have simply come too late. The damage

---

[1/] Roger Reger, Preschool Programming of Children With Disabilities Springfield: Charles C. Thomas, 1970), p. 3.

[2/] Based on Havigurst's listing of tasks as cited in Justin Pikunas, Human Development: A Science of Growth, (New York: McGraw-Hill, (1969).

[3/] Roger Reger, Preschool Programming of Children With Disabilities, p. 5.

inflicted by abnormal physical, mental, and social conditions becomes irreversible by the time the child is able to enter school.

As recently as February 1974 the Department of Special Education of the State of Virginia described this as yet largely unfulfilled need:[1/]

> Slowness in developing preschool programs for handicapped children has seemed to persist throughout the United States. While many effective programs are now in progress, they are scattered and the numbers of children served are relatively small. Statewide programs seem to be non-existent.

The last few years have witnessed a concerted drive by national, State, and local interests to ameliorate the situation. The initiation and expansion of early intervention programs for all infants and children with special needs is a stated priority for federal dollars.[2/] State legislatures have likewise responded by reducing the minimum age requirements for entrance into publicly supported programs. As may be seen from Figure 2, eight States now provide services to handicapped children from birth onward; another 25 States offer such services at various points prior to age five. Local efforts have similarly accelerated. From the numerous projects which developed from federal, State, and local incentives, we will describe a few of the more representative ones below in brief.

National Organization Sponsored Programs

Historically, the bulk of preschool special education services have been provided under the auspices of organizations dedicated to

---

[1/] Department of Special Education, State Department of Education, A Comprehensive State Plan for the Education of Young Children Below Age 5 in Virginia (February 1974), p. vii.

[2/] Winifred H. Northcott, "Preparation for Specialized Roles in Early Childhood Education for the Handicapped," in Proceedings of the Conference on Research Needs Related to Early Childhood Education for the Handicapped (BEH, February 11-13, 1975).

FIGURE 2: STATE EDUCATIONAL SERVICES AVAILABLE TO HANDICAPPED CHILDREN, ACCORDING TO AGE ELIGIBILITY 1/

Beginning at:

Birth	Age 2	Age 3	Age 4	Age 5	Age 6
Iowa	Virginia	Alaska	Connecticut	Arizona	Alabama
Kansas		Florida	Delaware	Colorado	Arkansas
Michigan		Georgia	Oklahoma	Hawaii	California
New Hampshire		Illinois	Tennessee	Maine	District of Columbia
North Carolina		Massachusetts		Minnesota	Idaho
Oregon		Rhode Island		Missouri	Indiana
South Dakota		Texas		Nebraska	Kentucky
Vermont		Wisconsin		Nevada	Louisiana
				New Jersey	Montana
				New York	New Mexico
				Ohio	North Dakota
				West Virginia	Pennsylvania
					South Carolina
					Utah
					Washington
					Wyoming

1/ Taken from N. Hobbs, The Futures of Children (San Francisco: Jossey Bass, 1975)

the needs of the handicapped. The National Association for Retarded Citizens (NARC), National Easter Seal and United Cerebral Palsy (UCP) have been traditional providers of such services. Even with the formation of newer programs such as OCD's Head Start and BEH's First Chance, these organizations continue to be the prime educational vehicle for preschoolers today. Ackerman and Moore[1/] state that these three organizations alone were in 1974 able to serve almost twice as many children than did all federally funded programs combined. The local chapter services of these organizations focus the delivery of their services on children who have a specific handicap. Mainstreaming is not part of the philosophy of these organizations. Rather, children with a common need are given an education which is directed at compensating for the limitation(s) which all of the children at the school share. While the services provided by these agencies have always been directed at catering to the needs of children with a specific handicap, the last few years have noted the broadening of the spectrum of provided services. All services, be they of an educational, emotional or health nature, usually emanate from a physical center to which the children are brought. Other than this broad statement of programmatic goals, there are few other generalizations that can be made about agency sponsored programs. The services and the evaluation of these services vary according to locale.

"Stimulatory" Federally Funded Programs

As noted above, there has been a strong commitment on the part of the Federal government to serve the needs of handicapped children. In addition to the Head Start effort, the Handicapped Children's Early Education Program, P.L. 89-313, and Title VI-B have all underscored this federal commitment. Historically, it has been the philosophy of Congress that federal monies can best serve this target group when the LEA has primary responsibility for such services.

1/ P.R. Ackerman and M.G. Moore, "The Delivery of Educational Services to Preschool Handicapped Children in the United States," in T. Tjossem (ed.) Intervention Strategies for High Risk Infants and Young Children (Baltimore: University Park Press, 1975).

Therefore, a prime thrust of federal programs has been to filter programs through local school districts which will subcontract private and nonprofit community agencies whenever appropriate.

In addition to Project Head Start, by far the largest of the federally mandated programs is the First Chance Network of model early childhood demonstration centers which is funded by BEH. Mandated by the Handicapped Children's Early Education Assistance Act of September 1968, First Chance programs must by law be geographically disbursed, involve cooperating parents, coordinate with other projects, and disseminate their results. Approximately 55 percent of the programs incorporate some degree of mainstreaming into their design.

As with the agency-sponsored programs described above, it is again difficult to generalize on the effectiveness of the First Chance programs, despite the fact that evaluation is a mandated component of their design. As Northcott describes it, "Each model is considered open-ended, tentative, and explanatory..."[1/]. Lillie further notes that the models range in scope from the informal with emphasis on social-emotional growth to the formal with heavy stress on cognitive gains.[2/] Ackerman and Moore conclude that "in the First Chance Network, no common vocabulary can be found which designates the models clearly, nor do evaluation schemes exist to determine the effectiveness of one model over another."[3/]

State-Legislated Programs

As depicted in Figure 2, there is a marked trend among the States to sponsor State-supported programs of special education for

---

[1/] Winifred H. Northcott, "Preparation for Specialized Roles in Early Childhood Education for the Handicapped."

[2/] D. Lillie, Early Childhood Education: An Individualized Approach to Developmental Instruction (Palo Alto: Science Research Associates, 1975).

[3/] P.R. Ackerman and M.G. Moore, "The Delivery of Educational Services to Preschool Handicapped Children in the United States."

preschoolers. At first glance, these impressive mandates may however, appear more encompassing than they are in actual fact. According to Abeson, "Unfortunately these mandatory requirements often have been ignored and, in virtually every State, many children in need of special education services have been unable to obtain them."[1/] Cohen concurs, but adds that while "not all States are taking advantage of their authorizations,... the fact that such authorizations have been achieved is very promising."[2/]

Most of the State plans share a goal similar to the one put forth by the Virginia State Department of Education, namely, "To provide at least a minimum program of service and to encourage a multiplicity of services to appropriately meet the needs of young, handicapped kids." In effecting this goal, State laws echo this exhortment put forth by the Illinois Department of Exceptional Children: We really cannot predict the effect of a handicap upon one's learning. We educate the child who has one or more of these conditions which may or may not interfere with his learning. We need to be ever mindful of the effect of these crippling impairments upon the child, the total child who has feelings, self-concepts, perceptions, and family."

This sensitivity has been translated into a variety of formats both among and within the States. There is no one or exemplary model for delivery of services which emerges from the literature. This diversity of program design is a direct result not only of the relatively recent birth of such programs, but also represents a conscious decision on the part of educators that "No one program is

---

1/ A. Abeson, "Movement and Momentum: Government and the Education of Handicapped Children-II," Exceptional Children (41,1974), pp. 109-115.

2/ Shirley Cohen, "Research Needs in Relation to Service Delivery Systems," in Proceedings of the Conference on Research Needs Related to Early Childhood Education for the Handicapped (BEH, February 11-13, 1975).

successful for all children, even those with similar handicapping conditions."[1/] Further, diversity represents a cost-effective decision to supplement already existing local programs rather than to transplant models for replication. The States have therefore turned to a variety of delivery mechanisms, which include the following:

- Self-contained classrooms
- Resource rooms/learning centers
- Itinerant services
- Clinical settings
- Center-based settings
- Home-based settings
- Neighborhood group centers
- Child development hostels
- Mobile classrooms
- Hospital-institution settings

This very individualized pattern of development once again negates the possibility of making comparisons between programs. Project goals, resources, and implementation procedures are not consistent within the States, let alone between them. In the Introduction to the Virginia plan, the authors explain: "As might be expected, rural areas generally have had fewer programs with no alternatives while the more comprehensive programs have been found in the heavily populated areas." With such divergence, generalizations cannot be made.

Grass Roots Programs

Spurred by federal and State financial support, the past few years have witnessed the emergence of numerous locally-based programs to aid the handicapped preschooler. As with the situation described at the State level, the local pattern is indeed rich with a diversity of approaches. A few noteworthy trends can, however, be mentioned.

[1/] Department of Special Education, A Comprehensive State Plan for the Education of Young Children Below Age 5 in Virginia, p. 5.

Where for many years hospitals, mental health clinics, and social service organizations were among the only vehicles for filling in the gaps left by State education programs, recently another mode of service has arisen to help relieve this situation -- the parent organized, parent administered preschool program for handicapped children. As Wharry describes, "From birth the child is dependent upon his family for behavior and language models. Family members are in a unique position to stimulate the child and to encourage early social interaction." [1/]

Parallel to the growth of parent organized projects is the increased popularity of home-based education for the young handicapped child. These programs adhere to the belief that the parent plays a crucial role in the education of young children, but are skeptical of the value of the group setting. Cohen iterates this concern: "Handicapped children may have difficulty imposing or seeing organization in a rich environment... which may be related to problems often reported of handicapped children becoming overstimulated in what we consider good preschool environment."[2/] Stanley concurs, writing "The traditional group-based nursery school situation is thus perfectly designed to perpetuate the avoidance of learning in those children who have the most difficulty in learning."[3/]

As set forth by Cohen, the primary differences between a home-based approach to preschool education for the handicapped and a center-based approach are as follows:[4/]

[1/] Rhoda E. Wharry, In Time and Space (San Rafael, Ca.: Academic Therapy Publications, 1975), p. 8.

[2/] Shirley Cohen, "What's Different About the Handicapped?" in The Implications of Recent Research in Early Childhood Development for Special Education (Albany: State Department of Education, November/December 1973).

[3/] J.C. Stanley (ed.) Preschool Programs for the Disadvantaged: Five Experimental Approaches to Early Childhood Education (Baltimore: Johns Hopkins Press, 1972).

[4/] Shirley Cohen, "Research Needs in Relation to Service Delivery Systems."

- The home -- not the center--is where the learning takes place
- The parent becomes the primary teacher. Consequently, the educator may not relate directly to the child at all, or may do so only in a limited way
- The parent becomes the primary learner, the one whom the educator teaches

The home-based approach is rooted in a philosophy strikingly different from that of the center-based approach. The experiences at the home and the parents themselves are the key to learning. The Portage Project (Wisconsin) is the most frequently cited such project in the literature. This project, which has since been replicated in a number of other sites, was primarily designed to equip parents of handicapped children aged 0-4 with the skills that would enable them to teach their children task oriented learnings, using the principles of behavior modification.

Other Delivery Systems

The standard service delivery systems which have been organized to meet the needs of the handicapped child have been outlined above. However, in addition to the traditionally structured systems there is also the documented development of delivery via television. While unable to control for a precise target audience, television is, nonetheless, able to reach a far greater, geographically disparate audience than can any other mode of delivery. The most comprehensive of these efforts is that being sponsored by "Mister Rogers' Neighborhood," a program aimed at the preschool audience. Among the shows being broadcast as a part of this series are five shows involving a child with spina bifida, five shows dealing with the Theatre for the Deaf, and five shows on individual differences among children. In conjunction with these programs, BEH has funded the development of coordinating materials to be used by handicapped children watching the shows.

Similar efforts have also been undertaken by other television shows for the young - "Zoom", "Ripples", and "Over Seven." In addition, the Regional Resource Center Network has used the medium

of telecommunications to combine direct services on a demonstration basis with training and development activities.

Related Utility of Projects to the Study At Hand

As may be inferred from the above descriptions of projects, a great many programs have been inaugurated during the past several years at all governmental levels in response to the pressing need to provide the preschool handicapped child with early educational intervention. The wide range of services makes any cross-comparison of programs an impossibility. Further, the relative newness of these programs also makes individual assessments difficult. This is not to say that statistically sound evaluations of individual programs have not been made. Projects such as the Huntsville (Alabama) Achievement School have been systematically evaluated to prove their efficacy. However, such individual assessments are limited in scope. Because of the small numbers of children involved, overall comparisons and generalizations are of little merit. Therefore, data on the success of individual, non-mainstreamed programs are useful to us only to the extent that they (1) provide us with insight as to other alternative programs in which the target population might currently be enrolled other than Head Start; and (2) allow us to examine the types of goals, objectives, and instruments which are used to measure program success.

In terms of measures of program success, the goals and objectives of these individual programs, while varying somewhat according to local priorities, are for the most part, consistent. All programs, similar to Head Start, state their desire to not just prepare the children for Kindergarten, but to equip them with the skills which will enable them to maximize their potentials. Since the overall goals of the projects are therefore in line with the objectives of the projects which we will be assessing, it is therefore of benefit to take a look at the evaluation instructions used by these projects for guidance in our own effort.

Basically, all standard tests used by non-mainstreamed projects can be described in one of these five general reference books:

- Buros' Mental Measurement Yearbooks
- Johnson and Bommarito's Tests and Measurements in Child Development: A Handbook
- Deborah Klein Walker's Sociometric Measures for Preschool and Kindergarten Children
- Boyer, Karafin, and Gail's Measures of Maturation: An Anthology of Early Childhood Observation Instruments
- Hoepfner, Stern, and Nummedal's CSE-ECRC Preschool/ Kindergarten Test Evaluations

The vast majority of instruments utilized by pre-school programs for the handicapped seek to measure gains in either the cognitive or socioemotional domain. Most of the preschool instruments either strive to measure gains in I.Q. or in "self" related skills such as self-help, self-confidence, self-discipline, self-worth, and self-attitudes towards family and society. As with the mainstreaming literature, there is little evidence of measurement of health-related gains other than in the form of biographical data. The measurement instruments employed cover a wide variety of techniques. The most commonly encountered ones are listed below:

- Projection techniques (associative, constructive, completion, choice of ordering, expressive)
- Unobtrusive measures
- Observational procedures (diary description, specimen description/event sampling, time sampling, field unit analysis)
- Rating scales (ranking lists, checklist, descriptive scale, numerical scale, graphic scale)
- Self-report measures
- Situational measures (sociometric/interviews contrived situational tests)

As with each of the domains being measured, a variety of instruments utilizing a variety of techniques are employed to test the intelligence of enrolled children. In surveying the available instruments in the field, Newland concluded that "most group and individual tests of 'intelligence' have been constructed on the basis of no

discernible psychological theory. They tend to be regarded, both by their authors and by their users, as psychometric devices which do, or are expected to, discriminate among those tested in a certain statistically defensible manner."[1/]

Among the most commonly cited tests are these:

- Stanford - Binet Intelligence Scale, Form L-M (L. Terman and M. Merrill, Houghton Mifflin Co., Boston, 1960). While this most familiar of intelligence tests can provide useful cognitive data, it is for many children and settings impossible to administer. Rather than for its I.Q. socres, many projects find it useful when viewed by a psychologist who studies the child's behavior and responses.
- Peabody Picture Vocabulary Test (L.M. Dunn, American Guidance Service, Circle Pines, Minnesota, 1959). It is generally thought that the Peabody is easier to administer than the Stanford - Binet because little activity is required. The test tells if the child can look at a picture, hear the word, and find the picture that matches. Through this measure of experience with the environment, the test shows if a child can accept a two-dimensional representation of a three-dimensional object.
- Illinois Test of Psycholinguistic Abilities (Board of Trustees of the University of Illinois, Urbana, 1968). When used with appropriately suited children, this test furnishes information on how a child interprets what he sees and what he can do about it.

In conjunction with measures of I.Q., a great many of the tests employed study the motor skills of students since it has become accepted educational theory that without motor development, cognitive progress is retarded. Two of the more popular measures of motor skills are The Purdue Perceptual Motor Survey (Eugene G. Roach and Newell Kephent, Charles E. Merrill Co., Columbus, Ohio, 1966) and Motoric Aids to Perceptual Training (Clara M. Chaney and Newell Kephart, Charles E. Merrill Co., Columbus, Ohio, 1968). Both of

---

[1/] T. Ernest Newland, "Assessing the Cognitive Capability of Exceptional Children," in Don L Walker and Douglas P. Howard, Special Education: Instrument of Change in Education for the 70's Charlottsville: University of Virginia Press, 1972), p. 41.

these scales provide information on differentiation of head, trunk, limbs, balance and maintenance of posture, body image, patterns of locomotion and rhythm, hand-eye coordination, ocular control and form perception. All of these sensori-motor learnings must be generalized by the child before he/she is free to deal with all dimensions of the environment.

In the area of socioemotional measures, there appears to be far greater variety in the types of instruments employed. Walker has devoted an entire volume to the collection of these measures. Probably the only test which appears to be used with greater frequency than the others is the Vineland Social Maturity Scale (E.A. Dole, American Guidance Service, Circle Pines, Minnesota, 1965). The majority of the measures used appear to involve checklists of social, eating, dressing, and toilet behaviors. For example, the Portage Project Checklist (Portage, Wisconsin) includes a checklist of behaviors and a card file of appropriate curricular ideas to be used with children 0-5 who are handicapped in one or more areas of growth and development.

Listed below are other instruments which were cited in the literature as useful in evaluating preschool handicapped children:

- Arizona Articulation Proficiency Scale (Fudala, J.B., Weskin Psychological Services, Beverly Hills, California, 1970)
- Assessing Language Skills in Infancy (Bzoch and League, Tree of Life Press, Gainsville, Florida)
- Assessment of Children's Language Comprehension (Foster, C.R., Gidden, J.J., Start, J., Consulting Psychologists Press, Palo Alto, California, 1969)
- Auditory Discrimination Test (Wepman J., Language Research Associates, Chicago, Illinois, 1958)
- Ayres Space Test (Ayres, A.J., Western Psychological Services, Beverly Hills, California, 1962)
- The Basic Concept Inventory (Engelmann, S.E., Follett Publishing Company, Chicago, Illinois, 1967)
- Bayley Scales of Infant Development (Bayley, N., Psychological Corporation, New York, 1968)

- Bender Gestalt Test For Young Children - Koppitz Method (Koppitz, E.M., Grune & Stratton, 1964)
- Boehm Test of Basic Concepts (Psychological Corp.)
- Cain - Levine Competency Scale (Consulting Psychologists Press)
- California Pre School Social Competency Scale (Levine, S., Elvey, F.F., & Lewis, M., Consulting Psychologists Press, Inc., 1969)
- Cattell Intelligence Scale (Psychological Corporation, New York, 1940)
- Columbia Mental Maturity Scale (Harcourt, Brace)
- Communicative Evaluation Chart from Infancy to Five Years (Anderson, Educators Publishing Service)
- Denver Developmental Screening Test (Frankenburg, W.K., & Dodds, J.B., Ladoca Project and Publishing Foundation, Inc., Denver, Colorado, 1968)
- Developmental Scale for Multiple Impaired Children OSP (Illinois) (Dept. for Exceptional Children)
- Developmental Task Analysis (Valett, Fearon Press)
- Developmental Test Potential of Pre School Children (New York, 1958)
- Developmental Test of Visual Motor Integration (Beery, K.E., and Buktenica, N.A., Follett Publishing Company, Chicago, Illinois, 1967)
- Early Detection Inventory (McGahan, F.E., and McGahan, C., Follet Publishing Company, Chicago, 1967)
- Early Identification - Meeting Street School Test (Hainsworth, P.K., and Siqueland, M.L., Meeting Street School, Providence, Rhode Island, 1969)
- Evanston Early Identification Scale (Landsman, M., and Dillar, H., Follett Publishing Company, Chicago, Illinois, 1967)
- Full Range Picture Vocabulary Test (Ammons, R.B., and Ammons, H.S., Psychologists Press, Palo Alto, California, 1948)
- Functional Checklist (0-3 Project, Peoria, Illinois, 1971)
- Goldman - Fristoe Test of Articulation (Goldman, R., and Fristoe, M., American Guidance Service, Circle Pines, Minnesota, 1969)
- Goldman - Fristoe - Woodcock Test of Auditory Discrimination (Goldman, R., Fristoe, M., and Woodcock, R., American Guidance Service, Circle Pines, Minnesota, 1970)

- Goodenough - Harris Drawing Test (Goodenough, F.L., and Harris, D.B., Harcourt, Brace, & World Publishing Company, Chicago, Illinois, 1963)
- Hejina Developmental Articulation Test (Hejina, R.F., Speech Materials, Ann Arbor, Michigan, 1959)
- Houston Test for Language Development (Crabtree, M., Houston, Texas, 1958)
- Katz Auditory Screening Test (Katz, J., Follett Publishing Company, Chicago, Illinois, 1971)
- L.A.C. Test: Lindamood Auditory Conceptualization Test, (Teaching Resources Corp., Boston, Massachusetts)
- Language and Learning Disorders of the Pre-Academic Child (Tina Bangs, Appleton-Century-Crofts)
- Lincoln-Oseretsky Motor Development Scale (Sloan, W., C.H. Stoelting Company, Chicago, Illinois, 1948-56)
- Maxfield Buchholz Scale of Social Maturity for use with Preschool Blind Children
- Performance Goals Record (from Trainable Children by Julia Molloy, John Day Co.)
- Pre School Attainment Record (Doll, E.A., American Guidance Service, Publishing Co., Memphis, Tennessee, 1966)
- Pre School Self Concept Picture Test (Zimmerman, I.L., Steiner, V.G., & Evatt, R.L., Charles Merrill Publishing Co., Columbus, Ohio, 1969)
- The Primary Visual Motor Test (Haworth, Grune & Stratton)
- A Program for Early Identification Disabilities (Wretha Peterson, Special Child Publications)
- Pupil Record of Educational Behavior (P.R.E.B.) (Ruth Cheves, Teaching Resources, Boston, Massachusetts)
- Quick Test (Ammons, R.B., & Ammons, C.H., Psycological Test Specialists, Missoula, Montana, 1958-62).
- Screening Test for the Assignment of Remedial Treatments (Ahr., A.E., Priority Innovations, Skokie, Illinois, 1968)
- A Sequenced Preschool Educational Developmental Scale (Michigan Upper Peninsula Comprehensive Program for Preschool Handicapped Children (ESEA Title III))
- Templin Darley Screening and Diagnostic Tests of Articulation (Templin, M.C., & Darley, F.L., Bureau of Educational Research and Services, 1960-69)
- Test of Basic Experiences (Moss M.H., California Test Bureau/McGraw Hill, Monterey, California, 1970)

- T.M.R. Performance Profile for the Severely and Moderately Retarded (Educational Performance Assoc.)
- Valett Developmental Survey of Basic Learning Abilities Valett, R.E. Consulting Psychologists Press, Palo Alto, California, 1966)
- Verbal Language Development Scale (Mecham, M.J., American Guidance Service, Circle Pines, Minnesota, 1959)
- Visual Motor Gestalt Test (Bender, L., Grune & Stratton, New York, 1946)
- YEMR Performance Profile for the Young Moderately and Mildly Retarded, (DiNola, Kaminsky, Sternfeld, Educational Performance Assoc.)

In addition to direct adoption of these tests, it appears to be increasingly common practice for many projects to adapt these measures for use with their children. This enables the evaluative instruments to be more fully reflective of each individual project's aims. The above referenced listing of tests will likewise prove to be a fruitful starting point for us in our own process of developing assessment instruments.

VIII. SURVEYS OF THE INCIDENCE OF HANDICAPPED CHILDREN AGED 0-5 IN THE UNITED STATES

In our cursory examination of preschool programs of a non-mainstreamed nature, it was noted that one of the outputs of that review was to provide us with knowledge of other programs which Head Start-eligible children might be attending. This insight will prove to be especially useful to us when we set out to develop procedures for detecting the total universe of handicapped preschool children in the country. With this goal in mind, OCD has further requested that we examine efforts that have heretofore been conducted in this area.

An intensive literature search of this topic revealed that there have been only a few previous attempts to obtain data of this type that have produced results of any satisfactory merit. The first of these are the surveys performed by the National Center for Health Statistics as part of their Vital and Health Statistics series. Specifically, the following surveys dealt with the topic under consideration:

- Series 10, Number 35, April 1967: Characteristics of Persons With Impaired Hearing, U.S., July 1962 - June 1963
- Series 10, Number 48, November 1968: Prevalence of Selected Impairments, U.S. July, 1963 - June 1965
- Series 10, Number 62, February 1971: Children and Youth: Selected Health Characteristics, U.S.: 1958 and 1968

All of these surveys were conducted in a similar manner. Of the 1,900 primary sampling units involved (PSU's), a sample was drawn and divided into segments of about nine households each. Door-to-door canvassing was then conducted of each of the sampled households. Anyone 19 years of age and older was interviewed to serve as proxy for the young children being surveyed.

For each of the surveys, data was collected every week for a year. By employing a continuous probability sample of a civilian, non-institutionalized population, the researchers were able to consider those interviewed during any phase of the canvassing as having the same basic characteristics as all others. Handicapping data was maintained for all of these surveys by age, sex, region, and socioeconomic level.

The second and more intensified of these attempts at identifying the handicapped preschool population have been the so-called "child find" surveys conducted by the States. Going by a variety of names such as "Project Child" in New Jersey "Count the Children" in North Carolina and "COMPILE" in Pennsylvania, each of these studies has the common aim of locating and identifying handicapped preschool-age children. Since 1974, which marked the passage of the Education Amendments to the Elementary-Secondary Education Act of 1965, the States have begun full-scale efforts to conduct such surveys. The impetus for this movement is a direct result of the mandate by the Amendments requiring State departments of education to identify all handicapped children within their domains in order to receive federal funding.[1/] At present, sixteen States and/or

---

[1/] The Law (P.L. 93-380) states: "...all children residing in the State who are handicapped regardless of the severity of their handicap and who are in need of special education and related experiences shall be identified..."

territories are conducting child-find surveys to identify children below the age of five; 9 States have methodologies for identifying handicapped children from birth onward. Figure 3 presents a listing of the States and/or territories which are currently involved in child-find studies.

While the exact methodologies employed by each State do vary, there are some generalizations which can be made about the procedures involved. Basically, the structure of the surveys can be summarized by these developmental steps:

- they contacted reliable individuals and groups often including State, county, and local officials, school administrators, PTA organizations and agencies dealing with the handicapped,
- they held meetings with these groups in order to establish objectives and a uniform set of rules and definitions,
- they conducted extensive publicity campaigns, i.e., used radio, T.V. newspapers, posters,
- they developed a questionnaire or standard form for data collection,
- they conducted field research training sessions or procedure development before the conduct of the data collection,
- they used available manpower when feasible, i.e., volunteers, agencies, professionals, etc.

Thirdly, in addition to these national and State initiated surveys, identification of handicapped children is also done, to a lesser and more specified degree, by certain interest groups and organizations. For example, The National Society for the Prevention of Blindness has opthamologists screen several million children each year for vision handicaps. Similarly, Volunteers for Vision sponsors the screening of handicapped children by optometrists. Likewise the division of Maternal and Child Health or Crippled Children within State Health Departments will often run screening programs to detect handicaps in the children served by that area.

FIGURE 3: STATES/TERRITORIES CONDUCTING CHILD-FIND SURVEYS BY AGE AT WHICH IDENTIFICATION BEGINS 1/

Beginning at:	Birth	Age 2	Age 3	Age 5	Age 6
	Kansas	Virginia	Guam	Arizona	Florida
	Maryland		Puerto Rico	Maine	Idaho
	Minnesota		California (Whittier Co.)	Ohio	Oregon
	Missouri				Rhode Island
	New Jersey				South Carolina
	North Carolina				
	Pennsylvania				
	Texas				
	Trust Territory				

58

1/ Adapted from Child Find: Proceedings from a Conference Sponsored by The National Coordinating Office for Regional Resource Centers and National Association of State Directors of Special Education (Washington, D.C., March 26-27, 1975)

Applicability of Findings

From the literature, and in particular the child-find studies, we are able to abstract methodologies directly relevant to the project at hand. In addition, screening forms, public relations communications, and the use of media are all available. All of this material will prove to be a valuable starting point for the development of our own methodology.

One other important feature to be derived from this body of literature is what pitfalls to avoid. Because the concept of a child-find study for preschool children has only recently been operationalized, the surveys thus far implemented have, like all beginning efforts, encountered problems for which we will have to make accommodations in our design. The chief problems cited will be listed below:

- Problems of diagnoses and screening. Perhaps more than any other area, this problem appears to be the chief bane of all such surveys. Van Doornick writes, "Among the various screening programs developed in this country, inaccuracies sometimes occurred due to inappropriate age of screening. For example, a screening project at our medical center was designed to discover congenital hearing loss in newborns. The 'Warblet' method resulted in 250 overreferrals for every case found."1/ This problem could have been averted by screening infants at a more reliable age for detection, such as 3-6 months. In addition to the timing of the screening, serious consideration must be given to the training of the screeners who will be doing this task. The literature is resplendent with examples of "screened" children who have been misdiagnosed and identified as handicapped. To avert such tragedies, in a GAO evaluation of Project Head Start, one of the recommendations made to Congress was the need for professional confirmation of diagnosed handicaps.2/ In the conduct of child-find studies where the identification of handicapped children is the primary goal, this problem becomes extremely crucial. Nearly every State methodology incorporates an element of in-service training for screeners into its procedures.

1/ William van Doornick, "Early and Periodic Screening Diagnosic and Treatment Program", p. 50.

2/ Comptroller General of the United States, Project Head Start: Achievements and Problems (Washington, May 20, 1975), p. ii.

- Problems of Categorization. Parallel to the problems inherent in the screening of children, are the problems involved in the use of handicapping labels. Without getting further into the social-emotional stigmas of applying such labels, there is the very real procedural problem of dealing with categorizations which are imprecise. Without universally accepted definitions for identifying handicapping conditions, it is almost impossible to avoid erroneous identifications, no matter how qualified the diagnosticians may be. Only through the establishment of precise definitions or criteria can we hope to achieve reasonable accuracy in reporting.

- Timing of outreach publicity. One of the chief weaknesses cited by the States in the evaluation of their own child-find efforts was the failure to begin public information early enough. It is important that the following be clearly outlined and disseminated prior to any collection procedures:

  .. Descriptions of the characteristics of children with exceptional needs

  .. Descriptions of available programs and services for these children

  .. Delineation of the steps that parents must take to enable their children to gain access to services

  .. Announcements of the times, dates, and sites of free orientation workshops and clinics

Through an analysis of the reviewed literature on child-find efforts, we will be able to build on the strong foundations which have already been laid by the States.

IX. CONCLUSIONS

From the review of the literature contained in this volume, it is obvious that the task ahead of us is an obviously large one. As we look to the experts for support, we are forced to conclude that at this stage we have little concrete knowledge upon which we can make judgmental decisions. If anything, the literature underscores the impressive need for the proposed study, so that in the future we will be able to cite statistically verified conclusions.

Certain hypotheses can, however be drawn from what has been written up to now. We know that certain administrative procedures and attitudes help to maximize program success. Further, we know that process-oriented tests are the best reflectors of achievement.

From the literature on non-mainstreamed programs for preschoolers, we have a panoply of tests from which we can adapt measures of learning. Moreover, from the child-find surveys we have methodologies and procedures for identifying and screening the population of Head Start-eligible children. Finally, we have specific programmatic models of mainstreaming which are most likely to effect a successful learning environment. From all of these findings we will be able to postulate outcomes that will form the basis of our evaluation plan. The eventual product of our efforts will be the filling of the void that now characterizes the literature.

BIBLIOGRAPHY

Abeson, A. "Movement and Momentum: Government and the Education of Handicapped Children-II," Exceptional Children (41,1974), pp. 109-115.

Ackerman, P.R., and Moore, M.G. "The Delivery of Educational Services to Preschool Handicapped Children in the United States." In Tjossen, T. (ed.) Intervention Strategies for High Risk Infants and Young Children. Baltimore: University Park Press, 1975.

Adamson, Gary, and Van Elten, Glen. "Zero Reject Model Revisited: A Workable Alternative", Exceptional Children (38,1972), p. 732-741.

Adkins, P.G., and Walker, C. "A Call for Early Learning Centers," Academic Therapy (4,1972), pp. 447-451.

Anderson, R.H., and Shane, H.G. (eds.) As the Twig Is Bent: Readings in Early Childhood Education. Boston: Houghton Mufflin, 1971

Babbidge, H. Education of the Deaf: A Report to the Secretary of HEW by his Advisory Committee on the Education of the Deaf, Washington, D.C.: GPO, 1965.

Baldwin, C.P., and Baldwin, A.L. "Personal and Social Development of Handicapped Children," in Sherrick, C.E., et. al. Psychology and the Handicapped Child. Washington, D.C.: GPO, 1974.

Barngrover, E. "A Study of Educators' Preferences in Special Education Programs," Exceptional Children (37,1971), pp. 754-755.

Becker, W.C., Madsen, C.H., Arnold, Carole R., and Thomas, D.R. "The Contingent Use of Teacher Attention and Praise in Reducing Classroom Problems," The Journal of Special Education (1,1967), pp. 287-307.

Berry, Keith E. Models for Mainstreaming: San Rafael: Dimensions Publishing, 1972.

Beez, W.V. Influence of Biased Psychological Reports on Teacher Behavior. Bloomington: Indiana University, 1968.

Bennett, A. A Comparative Study of Subnormal Children in the Elementary Grades. New York: Teachers College, 1932.

Bereiter, C., "An Academic Preschool for Disadvantaged Children: Conclusions from Evaluation Studies." In J.C. Stanley (ed.), Preschool Programs for the Disadvantaged. Baltimore: Johns Hopkins University, 1972, pp. 1-21.

Birch, J. Mainstreaming: Educable Mentally Retarded Children in Regular Classes, Minneapolis: Leadership Training Institute, 1974.

Blackman, Leonard S. The Brave New World of Special Education. New York: Teachers College, n.c.

Blumberg, L. "The Case for Integrated Schooling," The Exceptional Parent (September/October 1973), pp. 15-17.

Bowden, M.G., and Otto, Henry J. The Education of the Exceptional Child in Casis School. Austin: University of Texas, 1964.

Boyer, E. Gil, Simon, Anita, Karafin, Gail R. (eds.) Measures of Maturation: An Anthology of Early Childhood Observational Instruments. Philadelphia: Educational Laboratory, 1970.

Bradfield, R.H., et. al. "The Special Child in the Regular Classroom," Exceptional Children (5,1973), pp. 384-390.

Breton, M. "Mainstreaming the Handicapped," Today's Education (2,1974), pp. 20-25.

Broman, Sarah H., Nichols, Paul L., and Kennedy, Wallace, A., Preschool I.Q.: Prenatal and Early Developmental Correlates. Hillsdale, N.J.: Lawrence Erlbaum Assoc., 1975.

Budoff, M., and Gottlieb, J. "A Comparison of EMR Children in Special Classes with EMR Children Who Have Been Reintegrated into Regular Classes," Studies in Learning Potential (3,1974).

Burroughs, R., and Powell, F.W. "Can We Systematically Meet the Needs of All Deaf Children?" Peabody Journal of Education (April 1974), pp. 171-173.

Caldwell, B.M. "The Rationale For Early Intervention," Exceptional Children (36,1970), pp. 717-725.

Campbell, Bob, Geer, Fred, and Wathers, Betty. "The Pickney Project." Paper presented at CEC Annual Convention, New York, April 1974.

Cansler, D.P., and Martin, G.H., (eds.) Working With Families: A Manual for Developmental Centers. Washington, D.C.: BEH, Training Outreach Project, 1973.

Cartwright, C.P., and Cartwright, C.A., Gilding the Lilly: Comments on the Training-Based Model. Exceptional Children (3,1972), pp. 231-234.

Cassidy, V., and Stanton, J., An Investigation of Factors in the Educational Placement of Mentally Retarded Children: A Study Between Children in Special and Regular Classes in Ohio. Washington, USOE Cooperative Research Programs, Project No. 043, 1959.

Chaffin, Jerry D., "Will the Real 'Mainstreaming' Please Stand Up!" (or ...Should Dunn have Done It?)" Focus on Exceptional Children (6,October 1974), p. 198-204.

"Characteristics of Persons with Impaired Hearing, U.S. July 1962-June 1963," Vital and Health Statistics (10,35, April 1967).

"Children and Youth: Selected Health Characteristics, U.S.: 1958 and 1968," Vital and Health Statistics (10,62, February 1971).

Christopherson, Joan. "The Special Child in the Regular Preschool: Some Administrative Notes," Childhood Education (49, December 1972), pp. 138-140.

Christopolos, F. "Keeping Exceptional Children in Regular Classes," Exceptional Children (7,1973), pp. 569-572.

Cohen, Shirley. "Integrating Children with Handicaps Into Early Childhood Education Programs," Children Today (4, January-February 1975), pp. 15-17.

Coleman, James, "The Concept of Equality of Educational Opportunity," Harvard Educational Review (Winter 1968).

Comptroller General of the U.S. Report to Congress. Project Head Start: Achievements and Problems. Washington, May 20, 1975.

Council for Exceptional Children. State Law and Education of Handicapped Children: Issues and Answers, 1971.

Crain, Jacqueline. Early Childhood Education for Diversely Handicapped Children. Illinois: Department of Exceptional Children, 1974.

Cruickshank, William M., and Johnson, G. Orville (eds.) The Education of Exceptional Children and Youth, Englewood Cliffs, N.J.: 1958.

Dailey, R.F., "Dimensions and Issues in 1974: Tapping into the Special Education Grapevine - Mainstreaming Continues to be a Major Issue," Exceptional Children (7,1974), pp. 503-504.

Deno, Evelyn N. (ed.) Instructional Alternatives for Exceptional Children. Washington: National Center for Improvement of Educational Systems, 1974.

Department of Special Education, State Department of Education. A Comprehensive State Plan for the Education of Young Children Below Age 5 in Virginia, February 1974.

Devoney, C., Guralnick, M.J., and Rubin, H. "Integrating Handicapped and Nonhandicapped Children: Effects on Social Play," Childhood Education (50,1974), pp. 360-364.

Dunn, L.M. Exceptional Children in the Schools. New York: Rinehart & Winston, 1973.

Dunn, Lloyd. "The Normalization of Special Education." Inaugural Lecture, Laycock Memorial Lectureship, University of Saskatchewan, Saskatoon, Saskatchewan, Canada, November 1973.

Dunn, Lloyd M. "Special Education for the Mildly Retarded - Is Much of It Justifiable?" Exceptional Children (35,1968), pp. 5-22.

Education Commission of the States. Early Childhood Development: Alternatives for Program Implementation in the States. Denver: ECS, 1971.

Education Commission of the States. Early Childhood Programs in the States: Report of a December 1972 Conference. Denver: ECS, 1973.

Education Commission of the States. Special Education in the States: Legislative Progress Report. Denver: ECS, 1974.

Feibelman, H.P. "You the Law and Your Child." Paper presented at the Alexander Graham Bell National Convention in Atlanta, Georgia on June 21, 1974.

Ferguson - Floussant School District. Providing for the Preschool Child With Problems. Washington, D.C.: GPO, 1975.

Fine, M.J. "Clearinghouse: Attitudes of Regular and Special-Class Teachers Toward the Educable Mentally Retarded Child," Exceptional Children (6,1967), pp. 429-430.

Frick, E. "Adjusting to Integration: Some Difficulties Hearing Impaired Children Have in Public Schools," Volta Review (1,1973), pp. 36-46.

Gallagher, J.J. "The Special Education Contract for Mildly Handicapped Children," Exceptional Children (38,1972), pp. 525-536.

Garrett, C., and Storall, E.M. "A Parent's Views on Integration," Volta Review (6,1972), pp. 338-344.

Georgia Board of Education and State Superintendent of Schools. Policies and Executive Procedures Atlanta, n.d.

Goldstein, H., Moss, J.W., and Jordan L.T. The Efficacy of Special Class Training on Mentally Retarded Children, USDHEW Cooperative Research Program No. 6198. Urbana: Institute for Research on Exceptional Children, 1965.

Gorelick, Molly C., et. al. Careers in Integrated Early Childhood Programs. Washington D.C.: Rehabilitation Services, 1975.

Gottlieb, J., and Budoff, M., "Attitudes Toward School by Segregated and Integrated Related Children: A Study and Experimental Validation," Studies in Learning Potential (2,1972), p. 31-36.

Gray, Doris. "The Blind Child in the Regular Classroom," in Magary, James, F., and Eichors, John R. (eds.) The Exceptional Child: A Book of Readings. New York: Holt, Rinehart, and Winston, 1962, pp. 258-266.

Grosenick, J.K. "Assessing the Reintegration of Exceptional Children into Regular Classes," Teaching Exceptional Children (2,1970), pp. 113-119.

Grosenick, Judith. "Integration of Exceptional Children into Regular Classes: Research and Procedure," Teaching Exceptional Children (12,1970), pp. 113-119.

Guralnick, M.J. "A Research Service Model for Support of Handicapped Children." Exceptional Children (January 1973), pp. 39-43.

Head Start Services to Handicapped Children, Third Annual Report. Office of Child Development, June 1975.

Hobbs, N. The Futures of Children. San Francisco: Jossey Bass, 1975.

Hoepfner, W.H., Stern, C., and Nummedal, S.G. (eds.) CSE-ECRC Preschool/Kindergarten Test Evaluations. Los Angeles: Center for the Study of Evaluation and Early Childhood Research, 1971.

Iano, Richard P. "Shall We Disband Special Classes?" The Journal of Special Education (6,1972), pp. 167-177.

Iano, R.P., Ayers, D., Heller, H., McGeltigan, J.F., and Walker, V.S. "Sociometric Status of Retarded Children in an Integrated Program," Exceptional Children (4,1974), pp. 267-273.

Jacobs, J., The Search for Help: A Study of the Retarded Child in the Community. New York: Brunner-Mazel, 1969.

Jenkins, J.R., and Mayhall, W.F. "Describing Resource Teacher Programs," Exceptional Children (40, 1973), pp. 35-36.

Johnson, G. Orville, "Special Education for the Mentally Handicapped," Exceptional Children (29,1962), pp. 62-69.

Jordan, J.B., "Invisible College on Mainstreaming Addresses Critical Factors in Implementing Programs," Exceptional Children (1,1974), pp. 31-35.

Jordan, J.B., and Dailey, R.F. (eds.) Not All Little Wagons are Red Reston: CEC, 1973.

Jordan, T.E., et. al. Recommendations for Research Concerning the Education of Young Children: A Report from the National Program on Early Childhood Education (CEMREL) to the Bureau of Education of the Handicapped, 1971.

Kaufman, Martin J., Gottlieb, Jay, Agard, Judith, and Kukie, Maurine B. Mainstreaming: Toward an Explanation of the Construct. Washington: Intramural Research Program, BEH.

Kennedy, Ann E.C., "Operation Chatterbox," Hearing and Speech Action (43, May/June 1975), pp. 24-25.

Kennedy, P., and Bruininks, R., "Social Status of Hearing Impaired Children in the Regular Classrooms," Exceptional Children (40,1974), pp. 336-345.

Kirk, S.A., "Research in Education." In Stevens, H.A., and Heber, R. (eds.) Mental Retardation: A Review of Research. Chicago: University Press, 1964.

Klein, Jenny W., "Mainstreaming the Preschooler," Young Children (30, July 1975), pp. 317-327.

Leckie, D.J., "Creating a Receptive Climate in the Mainstream Program," Volta Review (1,1973), pp. 23-27.

Lewis, Eleanor Grater. "The Case for Special Children," Young Children (28, August 1973), pp. 368-374.

Lillie, D., "Early Childhood Education: An Individualized Approach To Developmental Instruction. Palo Alto: Science Research Associates, 1975.

Lilly, M.S., "Special Education: A Teapot in a Tempest," Exceptional Children (37,1970), pp. 43-49.

Lilly, M. Stephen. "A Training Based Model for Special Education," Exceptional Children (37,1971), pp. 739-746.

Lovitt, E.T., Teacher Acceptance of Classroom Integration of Children With Learning Disabilities. Arizona State University, 1974.

Lovitt, T., "Behavior Modification: Where Do We Go From Here?" Exceptional Children (37,1970), pp. 157-167.

MacMillan, Donald L., "Special Education for the Mentally Retarded: Servant or Savant," Focus on Exceptional Children (2,1971), pp. 1-8.

Martin, E.W., "A New Look for Education of Handicapped Children," American Education (3,1970), pp. 7-10.

Meyers, Edward L., Vergason, Glenn A., and Whelan, Richard J. Alternatives for Teaching Exceptional Children. Denver: Love Publishing Co., 1975.

Miller, J.G., and Schoenfelder, D.S., "A Rational Look at Special Class Placement," The Journal of Special Education (3,1969), pp. 397-405.

Minnesota State Department of Education. State Guidelines: Pre-school Educational Programs for the Handicapped in Minnesota. St. Paul: Department of Education, 1974.

Mullins, J.B., "Integrated Classrooms," Journal of Rehabilitation (2,1971), pp. 14-16.

National Coordinating Office for Regional Resource Centers and National Association of State Directors of Special Education. Proceedings from the Child-Find Conference, March 26-27, 1975.

Nelson, C.C., and Schmidt, T.J., "The Question of the Efficacy of Special Classes," Exceptional Children (37,1971), pp. 381-384.

Nix, Gary W., Mainstream Education for Hearing Impaired Children and Youth. New York: Grune and Stratton, 1976.

Northcott, Winifred N., "The Integration of Young Deaf Children into Ordinary Educational Programs," Exceptional Children (38, September 1971), pp. 29-32.

Panda, R.C., and Bartel, N.R., "Teacher Perception of Exceptional Children," Journal of Special Education (6,1972), pp. 261-266.

Pertsh, C.F., A Comparative Study of Subnormal Pupils in the Grades in Special Classes. New York: Teachers College, 1936.

Piqget, J., and Inhelder, B., The Psychology of the Child New York: Basic Books, 1969.

Pollack, D., and Ernst, M., "Don't Set Limits: Expectations for Preschool Children," Volta Review (75,1973), pp. 359-367.

"Prevalence of Selected Impairments, U.S., July 1963-June 1965," Vital and Health Statistics (10,48, November 1968).

Proceedings of the Conference on Research Needs Related to Early Childhood Education for the Handicapped. Washington, B.E.H., February 11-13, 1975.

Rafael, Berta. "Early Education for Multihandicapped Children," Children Today (2, January-February 1973), pp. 22-26.

Fauth, Marilyn. "Mainstreaming: A River to Nowhere or a Promising Current?" Changing Education (April 1976), pp. 1-5.

Reger, Roger. Preschool Programming of Children With Disabilities. Springfield: Charles C. Thomas, 1970.

Reger, R., "What Does 'Mainstreaming' Mean? Journal of Learning Disabilities (7,1974), pp. 57-59.

Reynolds, M.C., and Davis, M. (eds.) Exceptional Children in Regular Classrooms. Minneapolis: Leadership Training Institute, 1971.

Rister, Anne. "Deaf Children in Mainstream Education," Volta Review (77, May 1975), pp. 279-290.

Rivlin, Alice M., Timpane, P. Michael. Planned Variation in Education: Should We Give Up Or Try Harder? Washington, D.C.: The Brookings Institution, 1975.

Rosenkranz, C., "Another Look at Mainstreaming," Bureau Memorandum (2,1973), pp. 31-34.

Rosenthal, Robert, and Jacobson, Lenore. Pygmalion in the Classroom. New York: Holt, Rindhard, and Winston, 1968.

Sanford, A.R., Learning Accomplishment Profile. Washington, D.C.: BEH, Chapel Hill Training - Outreach Program, 1974.

Sanford, A., Semran, B., and Wilson, D. The Chapel Hill Model for Training Head Start Personnel in Mainstreaming Handicapped Children. Washington, D.C.: BEH, 1974.

Schattner, Regina. An Early Childhood Curriculum for Multiply Handicapped Children. New York: The John Day Co., 1971.

Schattner, Regina. An Early Childhood Curriculum for Multiply Handicapped Children. New York: The John Day Co., 1971.

Shattuck, Marquis. "Segregation versus Non-Segregation of Exceptional Children" Journal of Exceptional Children (12,1946),

Shearer, M.S., and Shearer, D.E., "The Portage Project: A Model for Early Childhood Education," Exceptional Children (3,1972),

Shotel, J.R., Iano, R.P., and McGettigan, J.F., "Teacher Attitudes Associated With the Integration of Handicapped Children," Exceptional Children. (38,1972), pp. 677-683.

Siegel, Ernest. Special Education in the Regular Classroom. New York: John Day Co., 1969.

Smith, S.A., and Solanto, J.R., "An Approach to Preschool Evaluations," Psychology in Schools (2,1971), pp. 142-147.

Stack, Patricia Marie. "In Our Program - Everyone Gets Into the Act," Volta Review (75, October 1973), pp. 425-430.

Stern, Virginia W., "Finger Paint on the Hearing Aid," Volta Review (71, March 1969), pp. 149-154.

Swap, M. "Integrating Children With Special Needs Into Regular Preschool Classes: Some Guidelines for Assessment," BAEYC Reports (15,1974).

Thurstone, T.G. An Evaluation of Educating Mentally Handicapped Children in Special Classes and in Regular Grades. Washington D.C.: USOE Cooperative Education Programs, Project No. OE-SAE-6452, 1960.

Valletutti, P. "Integration vs. Segregation," The Journal of Special Education (3,1969), pp. 405-409.

Vance, Barbara Jane. The Effect of Preschool Group Experience on Various Language and Social Skills in Disadvantaged Children. Palo Alto: Stanford University, August 1967.

Walker, Deborah Klein. Socioemotional Measures for Preschool and Kindergarten Children. San Francisco: Jossey Bass, 1973.

Walker, Don L., and Howard, Douglas P. Special Education: Instrument of Change in Education for the 70's. Charlottesville: University of Virginia, 1972.

Weininger, O. "Integrate or Isolate: A Perspective on the Whole Child," Education (2,1973), pp. 139-147.

Werry, J.S., and Quay, H.C. "Observing the Classroom Behavior of Elementary School Children," Exceptional Children (35,1969), pp. 461-467.

Wharry, Rhoda E. In Time and Space. San Rafael, Ca.: Academic Therapy Publications, 1975.

Wynne, Suzan, et. al. Mainstreaming and Early Childhood Education for Handicapped Children: Review and Implications of Research, Final Report. Washington, D.C.: Wynne Associates, 1975.

Yates, J.R. "Model for Preparing Regular Classroom Teachers for 'Mainstreaming'," Exceptional Child (39,1973), pp. 471-472.